

Chemical Week

April 19, 1952

Price 35 cents



It's shaping up: Less Washington drive for new plants, more on equipment output p. 13

◀ **Researcher Storch: His pride, synthetic fuels; problem, funds cut; promise, industry aid . . p. 27**

They'll soon flood the market: vinyl-based caulking compounds gun for \$35 million sales . . p. 45

Spending-shy consumers, defense stretchout, pared inventories brake chemical sales p. 61

◀ **Port of Mobile; woos bulk shippers with freight-saving, crate-it-on-the-wharf service p. 65**

In the spotlight...

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IPA**

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**Isopropyl Alcohol

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Chemical Week

Volume 70 Number 16
April 19, 1952

OPINION	4
NEWSLETTER	9
BUSINESS & INDUSTRY	13
RESEARCH	27
PRODUCTION	35
BOOKS	43
MEETINGS	43
SPECIALTIES	45
MARKETS	57
DISTRIBUTION	65
BOOKLETS	68

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April 19, 1952 • Chemical Week

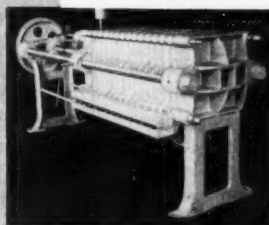
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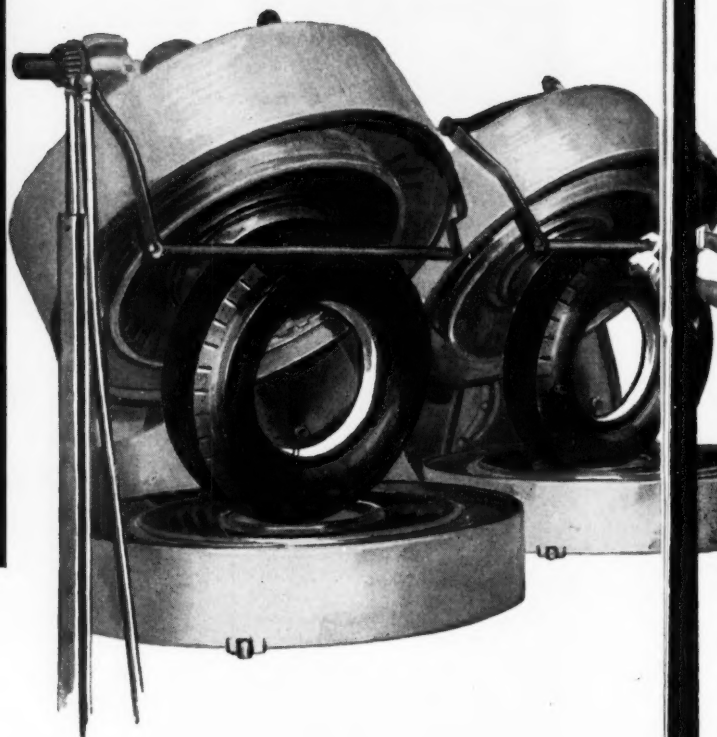
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Despite current shortages of this material, Dow is extremely interested in helping you utilize aniline to best advantage in your manufacturing processes. Dow will gladly cooperate with you if you desire technical assistance or further information about the economical use of aniline. Write to Dow, using the coupon at right.

HANDLING



Aniline is commonly stored in plain steel tanks. These tanks should be vented to a safe place. Although there is no particular fire hazard involved, it is advised that vents should be equipped with flame arrestors. It is also good practice to ground all equipment in which aniline is used.

If possible, it is advisable to use aniline in closed equipment only. When this is not possible, suitable ventilating equipment must be installed. A down-draft exhaust is indicated since aniline vapors are heavier than air.

Properties and Specifications of Aniline

Aniline is a practically colorless, highly refractive, oily, poisonous liquid with a characteristic odor. It tends to darken on exposure to air or sunlight but remarkably little color change occurs if aniline is stored properly.

Freezing Point, °F.....	21
Boiling Point, °F.....	364
Flash Point, Open Cup, °F.....	158
Specific Gravity (77°F./77°F.).....	1.021
Solubility (g/100 g.solvent)	
Water (25°C).....	3.5
Alcohol.....	∞
Ether.....	∞

SPECIFICATIONS

Boiling Range at 760 mm Hg	
IBP-DP, within.....	1.5°C.
5-95%, within.....	0.2-0.7°C.
Freezing Point, minimum.....	-6.3°C.
Nitrobenzene.....	None
Color.....	Colorless to straw

This is one of a series of Dow advertisements you may wish to keep on file for reference and information. Write Dow for reprints.

PROTECTIVE EQUIPMENT



Aniline is so readily absorbed that adequate protective equipment should be worn whenever contact is possible. This equipment should consist of a minimum of safety goggles, rubber gloves and apron, rubber shoes or boots and coveralls and underwear.

Whenever an aniline tank is to be entered it should be washed completely free of aniline and fumes. Anyone entering the tank should be provided with a proper harness and life line in addition to the previously mentioned equipment. Another individual should be watching the person in the tank from the outside at all times.

Any individual upon entering aniline equipment should be equipped with approved breathing equipment. This may consist of a positive pressure hose mask with hose inlet in a vapor free atmosphere or a self-contained breathing apparatus with stored oxygen or air. All masks and breathing apparatus should be approved by the U. S. Bureau of Mines and should be equipped with full face masks.

The precautions taken in unloading tank cars or other containers of any poisonous, flammable liquid should apply to the unloading of aniline.



TOXICITY INFORMATION

Aniline is highly toxic but it may be handled safely if proper care is taken. It is readily absorbed by the body upon contact, inhalation or ingestion. The first symptom of absorption of toxic quantities is cyanosis or blue lips. A feeling of "drunkenness" may exist for a short time followed by headache, drowsiness, nausea and vomiting. This may be followed by unconsciousness and death if exposure continues.

Toxic effects of aniline are generally acute; however, repeated exposure to low concentrations may give rise to what is called chronic aniline poisoning. However, upon complete cessation of exposure, individuals generally regain their normal health with no permanent pathology being in evidence.

FIRST AID



In the event of aniline contact, all contaminated clothing should be removed immediately and the person should be washed with large amounts of soap and warm water. All clothing should be thoroughly decontaminated before further use. In case of eye contamination, the eyes should be washed for at least 15 minutes with large amounts of flowing water. A physician should be summoned as soon as possible.

If aniline is ingested, the victim should be given immediately an emetic such as mustard and water or lukewarm soapy water. In any case mentioned previously or poisoning by inhalation, the patient should be removed from any further exposure . . . kept warm and be transported to the nearest medical attention.

THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN

WRITE DOW FOR INFORMATION AND TECHNICAL ASSISTANCE.

The Dow Chemical Company, Dept. OC-30A,
Midland, Michigan

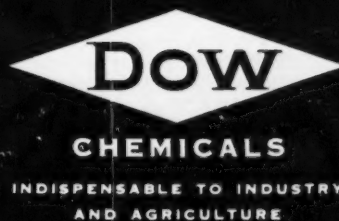
- ☐ Please send me additional information about aniline.
☐ Please send _____ reprints of this advertisement.

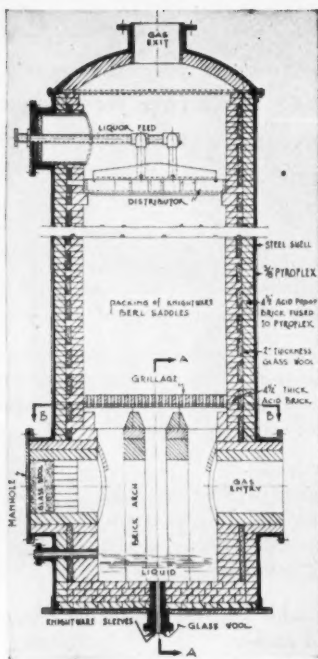
Name _____ Title _____

Company _____

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In the past 45 years Maurice A. Knight has developed many improved types of corrosion proof processing equipment to meet the needs of customers. These include Knight-Ware Chemical Stoneware, Permanite Resins and Pyroflex Constructions. The latter include tanks, towers, absorbers, fume washers, reactors, etc., and can be designed by our engineers to withstand almost any type of corrosive service.

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Acid and Alkali-proof Chemical Equipment

OPINION

Acquiescence, Aloofness

TO THE EDITOR: Anent the letter discussing the organization for collective bargaining purposes of chemists and professional employees (Apr. 5) . . .

With the advent of the Industrial Revolution the ever-present struggle between those that have and those that have not has been loosely termed as the struggle between capital and labor. In between these two "adversaries" has been the scientist, whose efforts have resulted in creating the medium of work for labor and made possible the acquisition of more wealth for capital. His status has always remained constant.

Due to the rigid demands of science and scientific thinking, this poor soul, the scientist, has had to adopt an attitude of subservience, dependency and mild acquiescence toward the former group and a smug aloofness toward the latter. In any event he has been taken for granted by both capital and labor.

It has only been with the dawn of the atomic era that some scientists have envisioned what potential power they hold and what an important role science plays in everyday life. Unfortunately, however, these few realists were far overshadowed by the majority of the meek, timid and introverted scientist with whom we are all familiar. . . .

This is written in the interest of the progress of science and the elevation of the scientist to leadership position both economically and socially . . .

P. M. CHRISTOPHER
Plant Chemist
Academy Plating Co.
Newark, N. J.

"Nice, Clean;" No Sell

TO THE EDITOR: Although I sympathize with Dr. Hanmer (Research Director, American Tobacco Co.) who complains that chemists do not seem to believe scientific facts when they appear in a cigarette commercial . . . it seems to me that, as you have suggested in your report on Luckies (Mar. 1) and have said in a postscript to Dr. Hanmer's letter (Apr. 12), the main problem is the wild claims and "panting prose" of such advertising.

That's what engenders disbelief . . . poses problems for chemists and other scientists doing serious work in the tobacco industry . . .

Here, for instance, is what *Advertising Age* had to say on the subject: "Cigarette advertising is silly, vicious, too competitive and a menace to the

entire structure of advertising." That magazine also highlighted some of the difficulties: "nice clean" copy doesn't sell cigarettes . . . competition is keen . . . most cigarettes are indistinguishable from each other once they are removed from the wrapper.

As a consequence, sales managers of various brands strive to endow their particular product with "more extravagant and unbelievable virtues" in order to make a sales impression . . .

And that, together with the sometimes silly references to "scientific" tests replete with pictures of "scientists" making sniff tests, blue smoke color charts and so forth . . . does real harm to all serious, diligent chemists including those in the tobacco industry . . . and unfortunately so . . .

M. H. KIRTHEN
Buffalo, N. Y.

Take a Close Look

TO THE EDITOR: Apropos of the continuing interest in the St. Lawrence Seaway problem (Feb. 16) as evidenced in your Opinion columns, I am enclosing . . . a copy of a letter I wrote the Hon. Charles A. Buckley, Chairman of the House Committee on Public Works under date of May 3, 1951 . . . It covers three important questions.

At his request I supplied Congressman Buckley with 30 copies of my letter for distribution among other members of his Committee. Since that time I have heard nothing further . . . which, of course, need surprise no one considering activities in Washington . . .

FRANK S. LOW
Rowayton, Conn.

Excerpts from Reader Low's letter:

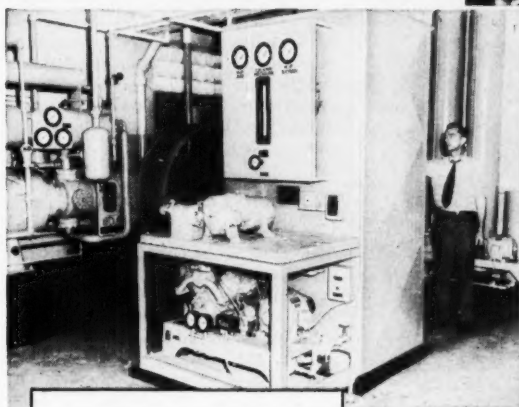
"I am not in favor of our government participating in construction of the seaway along the lines of any proposals that have so far come to my notice. Any attempt to provide a 27-foot channel all the way from the St. Lawrence to Duluth and Chicago . . . would be altogether too expensive relative to potential advantages . . .

"The cost must be considered of harbor improvements in every port on the Great Lakes to accommodate 27-ft. vessels. Proponents of the seaway fail to point out that the great bulk of Lake tonnage is bulk cargo—iron ore, limestone, wheat, etc. . . . and a special type of vessel has been designed to facilitate loading and unloading. The type of vessel in general use in ocean traffic is entirely unsuited for such rapid loading and unloading

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LEFT: R-Series Air Products Oxygen Generator in customer's plant. Capacity, 500,000 cubic feet per month.

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Ford Motor Company
Granite City Steel Co.
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Hartford Hospital
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Plants
Ammonium
Sulphate Plants
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Plants
Ammonia
Oxidation Units for
Chamber Plants
Sulphuric, Nitric
and Phosphoric
Acid Concentrators
Acid Sludge
Recovery Plants

OPINION

. . . so that general utilization of this waterway by ocean-going craft would be limited.

"The canals, dams and locks of the St. Lawrence part of the seaway should be constructed to provide a 27-ft. (or even deeper) channel through this section. Then provide suitable ports where cargoes could be transferred between present-day standard lake vessels and deeper-draft ocean vessels . . . or from vessels to railroads or trucks. Such transfer points might be located at Ogdensburg, Cape Vincent, Oswego, Montreal or Quebec.

"Too, this comparatively short stretch might be kept open in the winter. . . .

"One convincing argument of proponents is that we need it to transfer iron ore from Canada to our U. S. iron and steel centers on the Lakes. Our present lake-going carriers would be entirely adaptable to this service . . . because the salt water portion of the journey is in the sheltered water of the Gulf of St. Lawrence . . . is not beyond the limits of practicability and safety for these big lake-going vessels . . ."—Ed.

Cherchez and Boggle

TO THE EDITOR: This is what just happened to me as CW might report the incident: "This week graying, energetic Reader Le Page scurried to his mailbox, rifled through a lot of miscellany, snatched his copy of CW (Mar. 29), scanned the surging sentences on the cover, quickly flicked to p. 13. Reason: On that page, said the cover, was a news report on dyestuffs.

"But wrong it was, discovered Reader Le Page as he boggled at a sales analysis story on p. 13, found dye-stuffs on p. 11.

"What," said he, "is the matter with those cricket-sharp editors?" as he clanged down the lid on his rural mailbox, stomped back to his home. "Can't they count above ten?"

You won't, I'm sure, take me too seriously. I got a fiendish delight out of tripping you up and writing this note . . .

CHERCHEZ LE PAGE
Scranton, Pa.

To our friend with the coy pseudonym, a slow, sober bow for his excited emulation and low-pH lampooning of CW's prose. And to him (and the 63 other readers) who wrote to josh us about our mechanical blooper, our apologies. CW's statistician reports, by the way, that error nudged our cover-accuracy batting score down from a lofty 1.000 to a dismal .997.—Ed.

752



The Vulcan organization in Cincinnati has been serving the process industries over the past half century. In 1952 American industry will be called upon to bolster the country's defenses while meeting a steady load of essential civilian demands. In fulfilling these responsibilities, Vulcan is available with its technically-trained staff and specialized facilities to help solve many difficult processing problems.

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in
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and
decorative
finishes**



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These chemical processes, which employ sodium chromate, sodium bichromate and chromic acid, are invaluable in extending the use of scarce metals in both military and civilian production. When compared to anodizing they have the advantage of being cheaper and quicker.

For further information regarding the processes described above, as well as any of the many other uses for chromium chemicals, write to Mutual's Research and Development Department.

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OF AMERICA**

270 Madison Avenue

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NEWSLETTER

The mills of Justice grind slowly, but the U. S. Department of same took another step last week as it filed a reply to Du Pont and Imperial Chemical Industries in its anti-trust case against them.

The Department still asks for compulsory patent licensing. The companies say it's confiscatory; Justice counters that patents are not ordinary property but a privilege, and public interest (even if the public hasn't been hurt) must be redressed.

Divestiture of Du Pont's foreign holdings is also a bone of contention. Du Pont bases its argument for retention on the Timken case, claims that divestiture would be contrary to the Supreme Court's decision there. Justice bases its case, however, on the National Lead precedent.

The next step can be any of a number of choices: The Court may ask either party for more information, enter the decree as proposed by either party, or enter its own decree.

Although the government's loan policy is becoming more stringent (see p. 13), there's still RFC money for meeting defense targets.

Marks Oxygen Co. (Augusta, Ga.) just got \$66,000 at 5% for four years and seven months to buy oxygen and acetylene cylinders.

A more abstract purpose is served by a \$1.4 million loan to Johns Hopkins University. The school will put up an additional \$400,000 to build a \$1.8 million applied physics laboratory at Laurel, Md. DPA says the lab's proposed research and development is essential to the defense effort, and there's a shortage of facilities for that kind of work.

A states vs. Federal government battle is shaping up over water pollution control, and it will be up to Congress to choose.

The U. S. Public Health Service is now asking Congress for a three-year extension of the Federal Water Pollution Control Act. Congress originally gave USPHS its powers because of "health hazards."

But at the same time USPHS's Division of Water Pollution Control was asking for the extension, another division issued a summary of water-borne disease outbreaks in 1950, reported that they were at the lowest ebb since tabulation was begun in 1938, that for the first time no deaths occurred from polluted water.

Now USPHS points out that a good beginning has been made, the "good work" should be continued.

But several states, proud of their own abatement efforts—which they think are responsible for the good results, resent what they describe as Federal interference (CW Newsletter, April 5).

Insect "pollution" is another area which the Federal government will survey and report on. The Department of Agriculture is setting up a service in which industry, state and Federal entomologists will work together to warn farmers of impending insect invasions.

Timely reports, says USDA, can save millions of dollars' worth of crops and livestock every year.

Entomologists will keep their eyes open, tell state agencies first so immediate local action can be taken; reports will then be sent to Washington, combined with those from other states, distributed nationally.

Ebasco's synthetic fuels figures weren't released as originally scheduled (CW Newsletter, Apr. 5).

This week, Interior released parts of the report. Said Ebasco: A privately built plant would have to sell gasoline made from coal at from 15.7 to 17.6 cents a gallon.

In any case, Secretary of Interior Chapman's enthusiasm for fuel and chemicals from coal or oil shale is undampened. As recently as last week the tenor of a speech he gave was, "Now is the time."

Chemical expansion hit a big snag in Texas last week as 400 operating engineers (Engineers Local 450, AFL) struck for higher pay and 4,000 other workers honored their picket lines throughout Orange and Jefferson counties.

Affected projects: DuPont, at Orange; Gulf Oil's ethylene plant and Koppers' ethylene-benzene plant, both at Port Arthur; B. F. Goodrich, U. S. Rubber and Jefferson Chemical, all at Port Neches.

Texas is also having troubles with its tax on natural gas (CW Newsletter, Feb. 23). Court test of its validity has now been postponed a second time—until May 12 at the earliest.

The State Attorney General asked for the delay so that Amarillo Oil Co.'s suit could be added to two others and tried simultaneously. Reason: Amarillo's operations are wholly intrastate; the other plaintiffs—Michigan-Wisconsin Pipe Line Co. and Panhandle Eastern Pipe Line Co.—do interstate business as well. Addition of Amarillo broadens the test.

Still more Texas trouble—this time for Ethyl Corp.'s new plant in Houston. Indignant residents of Cayton St. are holding up construction of a brine pipeline which is scheduled to pass under their street. They're asking for revocation of Texas Brine Co.'s franchise.

But in spite of all these side skirmishes, the battle for expansion progresses apace:

DPA has totted up first-quarter results of its certificates-of-necessity program, finds 68% of new industrial organic chemical plants were in place at the end of March as compared with 57% at year's end.

Comparable figures for other chemical and process industries: industrial inorganics, 24% and 18%; alkalis and chlorine, 45% and 34%; compressed and liquefied gases, 52% and 46%; petroleum refining, 34% and 27%; by-product coke ovens, 52% and 39%; synthetic fibers, 30% and 18%; pulp mills, 42% and 36%; primary aluminum, 36% and 26%.

Kenneth Klipstein has resigned from NPA. Probable successor: Lawrence Strattner, now deputy director; he's on leave from West Virginia Pulp & Paper Co.

No one guessed, when Harvard's James Conant looked into the Crystal ball last fall for the ACS'ers (CW, Sept. 15, '51), that one of his predictions—oral contraception—would be so soon.

Many groups have been working on such materials. National Drug (Philadelphia), however, is the first to name a specific chemical. The entry: phosphorylated hesperidin. When given to rats, it prevents disintegration of the ovum's protective coating, and thus bars fertilization.

Despite 6 years of research on the material, National says results so far are only tentative.

... The Editors

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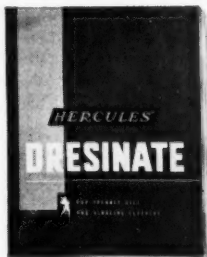
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BUSINESS & INDUSTRY

Steel-Oil Hookup

In its recent contract with Koppers at Oil City, Pa., (CW, April 5) the Gas, Coke & Chemical Workers (CIO) wrote in a new, and somewhat unusual, clause tying wages of Koppers' workers to wages in steel and oil.

Briefly, the unique provision said that six months after the contract at Koppers went into effect, workers at Koppers would get another raise in the amount of the difference between the recent raise and whatever raises steel and oil had managed to win in the six-months period. With both steel and oil strikes threatening and wages almost sure to rise, it looked as if Gas-Coke were tying its tail to the kite of its big brothers and almost certain to get a fat raise with no effort.

It also appeared to set a dangerous precedent that could be construed as "CIO-wide" bargaining, giving the relatively small chemical union the advantage of the strength of the larger steel and oil unions.

Not Unexpected: While the clause is new, it was not unexpected. Under existing wage regulations, which the unions don't want to break if they can help it, Gas-Coke had reached its limit at Oil City, and was eager to find some way to "dip into the future" legally.

In Oil City, oil and steel are the dominant factors, and a strong union bargaining point has always been the "prevailing area wage scale." This gave Gas-Coke a tailor-made way to insure a future raise while remaining in accordance with long-established union practices.

With oil and steel clamoring for more money, and many other advantages, the union felt fairly certain that workers in those industries would be making considerably more within six months.

At the same time, moreover, the company apparently had to admit the logic of the union's demand that the same relative position in wages and benefits between oil, steel, and chemicals be maintained. Further, it would appear that in case of trouble with the Wage Stabilization Board, the argument that the Chemical workers are merely asking for the prevailing wage in the area would be a strong one.

Machinery: Result of all this was



WAGNER: "No trend."

that to arrive at a fair wage scale for the chemical workers at Koppers, the company and the union took five oil and steel plants, got the work classifications, and based the present wage scale on that. In six months they will take the same five plants, the same job classifications, and find out how much the increase has been. Then the chemical workers will get a raise equal to the difference between the recent raise and any raise the steel and oil workers have received.



WILSON: "Rolling well."

No Trend: Apparently the situation is confined to the Oil City area for now and union president Wagner claims no trend in it. But little spots grow to big measles; and if it works out, other areas where chemical installations exist in the midst of large concentrations of another basic industry will certainly look with favor on it. In addition, if such clauses became standard, the chemical workers will likely tend to give their steel brethren a reciprocal helping hand in getting good wages. This, under any name, is close to "one-big-union" bargaining.

Wilson's Legacy

Chemicals, electric power and petroleum are just about the only segments of U.S. industry still requiring sizable expansion. But even here the road ahead looks easier—particularly since steel production is continuing under government seizure.*

Barring any new, unforeseen shortage of metals, defense buildup will have a continually lessened impact on construction. The tightest bottlenecks to expansion are giving way. Copper—lack of which has held up plant equipment—is still scarce, will stay that way this year. But supply of other construction materials is improving so rapidly that government controllers are planning to take off most restrictions by year's end or early '53.

Too Optimistic? That's the gist of Ex-Mobilization Director Charles E. Wilson's final quarterly report.

But industrial experts have since digested and calculated, are wondering this week whether Wilson's glowingly optimistic prose wasn't, to some extent, whistling in the dark. A few segments, including some chemicals, appear to them to be over-expanded. Other basic segments on which the rest depend, have lagged.

One result of this: DPA will be more selective in granting assistance. Except for the target areas, don't look for many more fast write-offs, loans or loan guarantees.

Also, the emphasis from here on out will be on equipment rather than plant construction.

Certificate Policy: DPA has already

* Under a precedent established before World War II, when an aircraft export firm was seized to prevent shipment of planes to South American revolutionaries.

approved certificates for \$16.6 billions' worth of plant expansion. Another \$9.9 billions' worth are awaiting action; but, except for the programs with new defense goals, few non-started projects will qualify.

This policy was implicit during the first quarter. About \$5 billion of plant and equipment got certificates, but most were projects started or even completed last year. They just beat

the March 1 deadline, after which DPA didn't consider applications for plants already under way.

Plenty to Sell: As of April 1, the date of Wilson's report, chemical plans called for a 12% capacity jump over 1951-250% over 1939. Add to this the planners' new goals and you have (1) a comfortable production base for war, but (2) a whopping quantity to sell in a peacetime economy.

Lab-Coat, Slide-Rule "Unions"

Professional "unions" are getting a closer look from chemists and engineers. Reason: Four lusty newcomers are successfully organized in the CPI.

Chicago meeting of professional unions in all industries throws national spotlight on the controversial subject.

The scene was Chicago, the 25,000 or so engineers, architects, scientists were all members of professional "unions" meeting to discuss getting closer together.

Most of them college graduates, most salaried, they gathered in Chicago for the recent national conference of professional employees associations. And among them were representatives of the four professional "unions" in the chemical process industries.

There can be little question that the picture at Chicago is prophetic, and sooner than one might think chemical companies are going to find "unions" blooming among the beakers. The four at Chicago came from California (Shell Development), Indiana (Standard Oil of Indiana), and Texas (Humble Oil and The Texas Co.); the next one can come from anywhere, any company.

Aviation First: Already technical personnel in the aviation and electrical industries have moved far and fast towards complete organization. The Chicago conference's main slant was discussion of plans among these groups to "go national." The feeling was, and is, that some federation is sure, and soon. When this happens, pooled finances will bring a strong arm into the green fields of the "unorganized." The effect of a truly national, truly professional, union in any industry will be a giant step toward the same in all other industries.

Professional unionization has been slow; one reason is that there has been nowhere to go for advice or help, nowhere to look for experience. Many industrial unions are willing to include professionals in their membership, but professional men have generally shied at this. Many office workers

do belong to non-professional unions, and many such unions do have engineers, chemists, and other professional people in their membership, but such situations are rare and such members few.

But today there are four places professional men in the chemical industry look if they have organizing on their minds.

The Four: The Association of Industrial Scientists was formed at Shell Development Research Lab., Emeryville, Calif., in 1943, certified as bargaining agent by NLRB in 1947.

- Research & Engineering Professional Employees Association, Standard Oil (Ind.) Whiting plant, was organized in 1944, certified by NLRB in 1945.

- Society of Professional Chemists & Engineers, Humble Oil Co., Baytown, Texas, formed in 1945, has not yet applied for NLRB recognition.

- Association of Professional Engineers, Chemists & Scientists, Texas Co., Port Arthur, Texas, is still in the formative stages, but well on the way.

Generally the four represent all non-supervisory professional personnel in research, engineering, utilities, conservation, development, and other such departments. REPEA has 92% of the eligible men at its plant; AIS had 80% but an influx of unorganized men from another branch of Shell dropped the figure to 65% despite an actual increase in membership; SPCE has 85-90% of the professional men at Humble; and APECS has 80-85% of those eligible at Texaco.

Membership is strictly voluntary, and anyone is free to resign at any time. There is no initiation fee, and dues are quite low. Only REPEA at Standard has "checkoff" of dues.

The groups are run on ultra-demo-



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cratic principles in an obvious attempt to escape many of the evils of present unions. No matter who actually administers the group, they are closely controlled as to term of office. All issues go back to the rank and file for ratification, and provision is generally made for recall, initiative and referendum.

It is up to the individual employees whether they take their complaints to the association for its officers to deal with management, or deal directly with management themselves. When a complaint comes to the group it is investigated, judged, and, if classified as meritorious, management is approached. In the final extreme arbitration can be resorted to.

Why Unions? Many top management men, and professional employees themselves, are puzzled as to just why a professional man would want a union. First, and probably foremost, is the omnipresent desire for more money. Ambition is partly monetary whether the man is in overalls or a double-breasted suit, and the members of these groups are all but unanimous in feeling that the general income level of professional scientists is too low, is not commensurate with their training or their value. As a simple instance, the president of one of the four "unions" points out that when he started his salary was 183% of a common laborer's wage, and now is only 130% of the same laborer's wage. The laborer has a union.

But the outstretched hand isn't the only reason; almost all the usual reasons for forming unions are playing their part. "Intolerable" working conditions have spurred some groups to

organize, and others have fretted about the feel that it is easy to get "lost" in a big lab. Many seem to be looking for the chance to voice their opinions about the company and other matters without fear of company reprisal, or jeopardizing their position. Others want a voice on their behalf in management circles—the age-old desire to meet the boss on equal terms to ask for what they want rather than be given what they get by company fiat.

Still others formed their own union to have representation and yet avoid being forced into a union with non-professionals. Regardless of reasons, the high percentages of voluntary membership shows that professional men do feel they have reasons for joining that, at least, satisfy them.

Professional Attitude: Sired and run by professional men it would be expected that these "unions" have a different slant than the average labor union. Basically the difference is simply that the professional men, in or out of a union, still identify themselves with management to a large degree. They are careful to give consideration to management's position, and dwell a good deal about the professional man's knowledge of the business as a means of insuring against inordinate demands on the company.

They insist on merit rather than seniority as a basis for raises, look for percentage increases rather than straight monetary hikes, oppose the "ability to pay" principle, oppose strikes, slowdowns, closed shops, etc. All this shows the "professional" attitude, but it is rather doubtful that any union, even a professional one, will completely sidestep all these traditional tools and weapons.

So anxious are some of these groups to maintain their "professional" position that they even shy at the word "union." It is noticeable that all four in the chemical industry fail to have the word union anywhere in their title. But name or no, that's what they are.

Gains: Advantages gained for the members of the two NLRB-certified professional unions are already impressive. Generally they have campaigned to see that allowable cost-of-living and other WSB increases are granted as fully as possible. They have pressured supervisors to keep scientists posted on how they are doing, to dispel the shroud of silence that sometimes hides such things as salaries, merit raises, and management's true opinion. However, actual individual salaries remain a confidential matter between the individual and the company; the union deals only in anonymous figures, and averages.

More specifically, REPEA had the patent assignment fee boosted from \$10 to \$50; AIS has also won extra pay for its members doing shift work, and both AIS and REPEA have encouraged management to send more non-supervisory employees to technical society meetings. In addition AIS claims liberalization of vacation benefits and attendance at the company-sponsored lecture program.

Obviously these demands and gains show the hybrid nature of professional unions. In the money matters they are essentially like all unions, but the other demands are peculiarly profes-

sional. This is one answer to critics who think that "unionism" will destroy "professionalism." Actually the professional unions are out to advance not only each member but the profession itself.

Looking In: The views of outsiders, and companies, differ sharply. Some professionals won't touch a union with a ten-foot pole, others are ready to welcome one in their own company. One thing is certain: Recent college graduates feel much cozier toward the idea than their counterparts did ten years ago.

Companies that now have these un-

Current List of DPA-Certified Chemical Facilities

Company and Location	Product	Amount Applied for	Amount Certified	% Certified
Heydes Chemical, Fords, N. J.	Hexamine	426,500	182,150 217,003	40 50
Esso Standard Oil, Linden, N. J.	Isobutylene, polybutene, lubricating oil additives	8,529,900	6,480,950 1,148,150	65 45
Central Chemical Corp. of Lebanon, Lebanon, Pa.	Chlorine, caustic soda	631,000	397,000	45
Allied Chemical & Dye, North Claymont, Del.	Fluorpar	61,272	61,272	50
American Agricultural Chemical, Pierce, Fla.	Phosphorus	947,216	875,443	45
Mineral Pigments, Muirkirk, Maryland	Pure chromium oxide	98,300	98,300	60
Ferro Enamel, Cleveland, Ohio	Thermite	33,237	33,237	60
Lubrizol, Wickliffe, Ohio	Lubricating oil detergents	548,473	173,000 164,953 191,770	15 65 50
Allied Chemical & Dye, River Rouge, Mich.	Sulfuric acid	406,000	406,000	70
Old Dutch Refining, Muskegon, Mich.	Benzene, toluene	326,100	326,100	40
Interlake Iron, Chicago, Ill.	Ammonium sulfate	624,300	544,300	45
Shell Chemical, Houston, Tex.	Ethyl chloride	9,500,000	6,232,000 412,000 410,000	65 45 15
Imperial Sulfur and Acid, Farmington, N. Mex.	Elemental sulfur	474,163	474,163	70
Quimico, Contra Costa Co., California	Tetraethyl lead	1,267,000	1,022,900 115,500 78,600	75 45 15
Shell Chemical, Martinez, California	Lubricating oil detergents	790,000	757,050 21,350 11,600	65 45 15
Kaiser Aluminum & Chemical, Salinas, Calif.	Calcined dolomite	396,000	396,000	50
Hercules Powder, Mansfield, Mass.	Formaldehyde	\$2,409,904	\$2,379,904	55
Allied Chemical & Dye, Syracuse, N. Y.	Nitrogen*	24,600,000	24,450,000	45
North Metal & Chemical, York, Pa.	Tungstic acid	72,323	72,323	60
Hercules Powder, Brunswick, Ga.	Pine oil, turpentine, resins	833,400 407,099	833,400 407,099	45 50
National Chemical, Yazoo City, Miss.	Nitrogen*	7,212,446	7,212,446	45
Sid Richardson Gasoline, Pointe-a-Hache, La.	Nitrogen*	19,000,000	19,000,000	45
W. R. Grace, vic. New Orleans, La.	Nitrogen*	15,466,000	15,466,000	45
Delta Chemical, Buras, La.	Nitrogen*	8,892,000	8,892,000	45
Barnhart Hydrocarbon, Big Lake, Tex.	Propane	38,698	38,698	65
Baumhoff-Marshall, Cascade, Ida.	Monazite sands	161,000	160,000	65
Pacific Chemical, Franklin County, Wash.	Nitrogen*	5,735,000	5,735,000	45

* Replaces earlier DPA listing (CW, Mar. 29).

ions apparently don't feel they are harboring a serpent in their midst. Standard advises REPEA of new men, informs it of promotions, and cooperates, bargains, and arbitrates. Shell gives new men a copy of the AIS contract, and provides the "union" with a quarterly list of all employees by position classification.

Standard says, "We deal with REPEA as with any other union." But actually there is more than a hint of an un-union-like gentlemen's agreement. REPEA guarantees no coercion—strikes, boycotts, slowdowns—and Standard guarantees no discrimination against members.

Apparently both Shell and Standard have learned to live with their unions in amity. Sixty members of REPEA have been promoted to supervisory positions, and virtually all recent promotions to management at Shell have been from the ranks of AIS.

The true attitude of professional unionism is probably best summed up in these words of Vernon H. Kane, president of the fledgling association at Texaco. "We would like to regain some of the lost economic advantage and prestige . . . have organized to exert our collective force to that end. However, we would . . . retain our positions as confidantes of management rather than opponents, which is the usual labor viewpoint."

Whether or not they will maintain this position under the strains of practice, is difficult to say.

Intrusion Tussle

Last week the problem of salt water intrusion into parts of California's fresh water table (CW, Dec. 22, 51) was back in the news. Reason: The highly-touted experiment at Manhattan Beach to prevent intrusion by literally "building" a freshwater dam with injection wells has come to a sudden halt, may fizzle outright.

In a maze of troubles, the project's immediate headache causing the halt is the state's fear that private and industrial water supplies may become contaminated as a result of the experiment, that it would be liable.

Obstacles are piling up no end. The test site is such as to make it difficult to evaluate some of the experimental data. It now appears doubtful that any definite design criteria applicable to other areas will be developed. And so much fresh water is needed that an assured supply sufficient to run the test long enough for good results may not be available.

More important is the fact that a wave of highly saline water will move inland, could cause serious

damage to inland well water for which the state would be liable. Most important, probably, is that more than the originally allotted \$450,000 will be needed to carry the project beyond seven months.

Whoa! After hearing the bad news-containing report of Harvey O. Banks, principal hydraulic engineer for the state Water Resources Board's Division of Water Resources, the Board called an abrupt halt to the actual injection of water. Now the test's fate depends, apparently, on the state's ability to obtain waivers from the water service organizations in the area releasing the state from responsibility.

Whether or not the sudden outcropping of obstacles will mean the death knell for the injection well-pressure mound experiment, is not clear at the moment, but, certainly, prospects are discouraging. All is not dim in engineer Banks' view, however. After setting the Board in the dumps with these sad facts, Banks came up with some cheerful ones.

Cutoff Walls: The silver lining comes from the other side of the experimental picture: earthen cutoff walls to hold back that sea water. The good word for the state, and water-gulping industries, is that the method looks good, has many advantages.

Some merits: permanent; continual operation not needed; low maintenance cost; no water supply called for or wasted. Catch: An experimental project is needed, will cost \$350,000. Biggest demerits—even after all experiments are in: there is a definite depth limit to which the wall can be constructed, initial cost is high.

Long Shot, But . . . Despite the high initial cost of the cutoff wall, it appears to be the best bet to date for getting to work and stopping the menace of intrusion before it can become a really serious problem. The experimental cost is less than that allotted to the intrusion test, and appears at this point to be the entire cost rather than a drop in the bucket as with the intrusion experiment.

COMPANIES

TEL: Ethyl Corporation's \$45 million Houston, Tex. facilities are being "warmed up" prior to beginning production. To be manufactured: TEL, lead chloride, sodium, chlorine and ethylene dichloride.

Formaldehyde/Urea Resins: Demopolis, Ala. plant of Borden's chemical division has made trial runs of formaldehyde, is slated for full production of it and liquid urea late this month. An estimated 1.5 million lb./

yr. of formaldehyde (via methanol oxidation), 2 million lb./yr. of urea resins, will be produced, for resin manufacture either at Demopolis or at Borden's Kernersville, N. C. plant.

Wood Pulp: A new company, International Resources, Ltd., plans to build a \$16.5 million wood pulp plant near Red Deer, Alta.

Pipe Line Note: Salt Lake City seems destined to become a hub of pipeline construction. In addition to Salt Lake Pipeline's line to Boise, now a-laying (CW, April 12), another new line is in the offing: Continental Oil and Sinclair Oil are planning a joint 310-mile line to transport oil products from Sinclair, Wyo., to Salt Lake City.

Pennsalt has registered a 155,349-share common stock offering with the Securities and Exchange Commission. The shares are to be offered to present share owners at a rate of one new share for each seven held.

Brown-Allen Chemicals, which five weeks ago absorbed Chasers, Inc., has agreed with Standard Piezo Co. (all Carlisle, Pa.), on a merger plan. Standard is a manufacturer of quartz and other piezoelectric crystals.

Ferro Corp. directors have approved purchase which will give it full control of Wel-Met Co. (Kent, Ohio). Ferro obtained a 50% interest in Wel-Met a month ago (CW, Mar. 22).

Glass Fibers' stockholders have approved a rise in the authorized common stock from 1 to 1.25 million shares (CW, April 12).

Lone Star Cement has registered with the SEC a forthcoming sale of 154,209 shares of common stock. Proceeds, estimated at \$3.8 million, would go to reduce bank loans incurred for construction in Virginia and Texas.

Fluorspar: Kaiser Aluminum & Chemical has purchased 50 acres of land near Fallon, Nev., for a fluorspar concentration mill to handle material from the company's Gabbs, Nev., mine (CW, Feb. 23). Capacity will be sufficient to handle ore purchased from other deposits in the state. Construction will begin shortly, and the mill is expected to be in operation by fall.

Plastic Tomato: About one-half million polyethylene catsup dispensers have been sold in the three months the container, which is shaped and colored like a tomato, has been on

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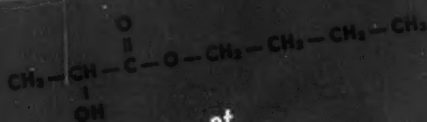
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Purity, ester by weight, minimum:	95%
Specific Gravity at 20°/20°C:	0.974-0.984
25°C./25°C:	0.970-0.980
Acidity as lactic acid, maximum:	0.15%
Water (naphtha test):	None
Non-volatile matter, maximum:	0.01 g./100 ml
Color:	Water-white
Distillation Range:	
Below 140°C:	None
Between 155°C and 195°C, minimum	90%
Between 187°C and 189°C, minimum	60%
Above 200°C:	None

PHYSICAL PROPERTIES

Formula:	$\text{CH}_3\text{CHOHCOOC}_4\text{H}_9$
Molecular Weight:	146.18
Boiling Point at 760 mm Hg:	188°C
Evaporation Rate, by volume (n-Butyl Lactate=100)	5.3
Vapor Pressure at 20°C:	0.4 mm Hg
Melting Point:	-43°C
Coefficient of Expansion, per 1°F:	0.00055
Weight per U. S. Gallon at 68°F:	8.15 lbs.
Flash Point, Tag Open Cup:	168°F
Refractive Index, n_D^{20} :	1.4216
Surface Tension at 20°C:	30.6 dynes/cm
Solubility in water at 25°C:	3.5% by volume
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BUSINESS & INDUSTRY

the market. Squeezit Corp. (Morris Heights, N.Y.) sells it (\$1), has made a survey indicating there is a market for 10 million, possibly 3 million this year. Plax Corp. (Hartford, Conn.) supplies the custom-molded shape and polyethylene fitments.

Robert Gair stockholders have approved purchase of Owens-Illinois Glass' American Coating Mills division, which now becomes American Coating Mills Corp., a Gair subsidiary with executive offices in Chicago.

Potential for Boom

In the big, booming, bustling process industry, no single product carries a bigger potential for boom or bustle than metallic titanium. Companies are vaulting into the picture faster than hats into the presidential ring. Latest two: Glidden Co. (Cleveland) and Bohn Aluminum and Brass Corp. (Detroit).

The two companies will pool research facilities, conduct the project on a 50-50 basis. Bohn's McCullough (chief metallurgist) and Glidden's Allan (research director, Chemical-Pigment-Metals Division) will head up activities to be carried out in Bohn's Detroit laboratory and the Glidden Baltimore lab.

Entry of Glidden into the picture comes as no great surprise, for it is integrated back to raw materials through ownership of ilmenite-bearing lands in North Carolina, has operated an ilmenite mine near Lenoir (N.C.) for ten years. And through its marriage of research facilities with a metals company, Bohn, it is taking the popular means of establishing itself in the field. The chemical company brings research know-how to the union, the metals company brings fabricating techniques and sales outlets for metal.

Cost is Crux: The whole idea, of course, is to find a cheaper way to win the metal from its ores. Certainly, there is no lack of either raw materials or demands for titanium. The military is currently clamoring for titanium at any price, but it doesn't take an unusually keen mind to see that demand will slacken off in more normal times unless the present \$5 a lb. price tag comes down.

That explains why commercial producers are pushing for more output and at the same time all companies interested in the metal are eagerly seeking cheaper processing methods. The latest picture of who's doing what in titanium:

• Du Pont has had a long standing interest in titanium, is presently on

top of the heap as far as output is concerned. Last year it turned out 400 tons (the entire country made 700 tons). Du Pont is now producing two tons a day at its Newport (Del.) plant; it plans a ten-ton-a-day plant in or near Wilmington.

• Titanium Metals, jointly owned by National Lead and Allegheny Ludlum, is now making a ton a day at its Henderson (Nev.) plant. Schedule calls for ten tons a day by the end of the year. Meanwhile, National Lead is pilot-planting an electrolytic process at its Sayreville (N.J.) plant.

• Crane Co., the Chicago valve manufacturer, probably ranks third as a producer of titanium. Last year, it made a surprise entry into the business (*CW*, June 16, '51), is now making a ton a week in its pilot plant.

• Metal Hydrides (Beverly, Mass.) makes a powdered form (analyzing 98.5% titanium, compared to the 99.5% commercially pure sponge).



GLIDDEN'S ALLAN: To a titanium marriage, research know-how.

Producing about 1,500 lbs. a week, it is the only commercial source of the powder in the country.

• Horizons Titanium is a joint venture of Horizons Inc., (Princeton, N.J.) and Ferro Corp. (Cleveland). Working on a Navy contract, Eugene Wainer, research director of Horizons, worked up an electrolytic process; Horizons Titanium was formed to pilot-plant it. Wainer's process caused a lot of speculation when the Navy said it would turn out titanium for \$1 a lb. Although Wainer will neither confirm nor deny the Navy estimates, the industry-held belief is that Wainer figures costs will actually be only 28¢ a lb. However, industry thinks Wainer's estimates are based on laboratory

work, will be a lot higher on a commercial or pilot scale. His process is believed to turn out a titanium powder rather than the commercially pure sponge.

• Monsanto and National Research Corp., a pioneer in titanium research, are teaming up to push development of the metal. Both companies agree it is too early to discuss progress or line of attack. One possibility: They are investigating the feasibility of reducing the tetrachloride with a metal other than magnesium used in present commercial processes.

LABOR

Portal-to-Portal: In a Baton Rouge courtroom this month 918 employees of the Ethyl Corp. opened their suit against the local plant. They are seeking portal-to-portal pay, and their attorneys cited the Federal Wages and Hour Law of 1938 in asking the court to grant time-and-a-half wages for various activities preliminary to actual working hours.

The employees want this wage for the time spent dressing and undressing for work, walking to and from the plant gates to their jobs, and for any necessary labor preliminary to working hours.

Court attendants predict a long, involved trial.

• **CIO Wins:** The 5,000 employees of Hercules Powder Co. at Radford Arsenal, Radford, Va., elected the United Gas, Coke & Chemical Workers their bargaining agent in last month's election.

• **CIO Cropper:** Production employees of the Celanese Corp. of America plant at Narrows, Va., turned back a bid by the Textile Workers (CIO) to be their bargaining agent. Actual winner was the United Mine Workers District 50-United Construction Workers local.

The vote in the two-day election was 650 for the TWUA and 1,350 for No Union. Since the Mine workers local cannot appear on NLRB ballots the vote was apparently one of confidence in District 50-United Construction Workers.

• **Out of Job:** Striking employees of Linear, Inc.'s Plymouth, Pa. plant are now out of jobs. Rather than continue the negotiations that began last Dec. 3, the company has decided to close down and sever all connections with the locality. The workers are members of the United Rubber Workers (CIO).

• **Seek Rights:** A fracas is shaping up at



NO longer in the laboratory category of scientific curiosity, Lithium has achieved the status of a new industry through the medium of applied research. Lithium's commercial significance embraces field after field. The amazing increase in usage of Lithium and Lithium chemicals has been possible largely through the extensive development work of Metalloy Corporation, basic to this fast-growing industry.

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BUSINESS & INDUSTRY

Mathieson Chemical Corp.'s Brandenburg, Ky. plant, where the Oil Workers International Union (CIO) and the International Chemical Workers Union (AFL) are each seeking to represent the 190 production and maintenance employees.

Three craft unions are seeking to represent other small groups of non-production workers.

EXPANSION...

Sulfur: Stanolind Oil is planning a sulfur-from-hydrogen-sulfide unit at its North Cowden, Tex., facilities. Girdler will build the unit, which is to produce almost 18 long tons per day. Feed gas at North Cowden contains 58% sulfide.

• Sulphur Converting Corp. plans to begin construction in May on a \$5 million sulfur-from-pyrite plant at Roberval, Que., 200 miles northeast of Quebec.

• Freeport Sulphur is planning to develop a new, but small, sulfur dome in Fort Bend County, about 35 miles northwest of Freeport, Tex.

• Noranda Mines has pegged this summer for starting construction on its Hamilton, Ont. plant to produce sulfur dioxide, elemental sulfur and iron oxide from pyrite mined at Noranda, Que.

• **Borax:** Production of Tronabor (crude borax pentahydrate) has begun at

American Potash's Trona facilities. The product is designed for supplying trace quantities of boron to soils.

• **Salt:** Canadian Salt is exploring a deposit at Ojibway, near Windsor, Ont., to see whether dry mining is possible.

• **Zinc:** A silver mine near Butte, Mont., abandoned in 1896 because its ores contained zinc, now is to be reworked for its zinc. Reworker is Coronado Copper & Zinc of Los Angeles.

• Barvue Mines has picked Chicoutimi, Que., as the site of a projected \$14 million zinc refinery, which is to handle ore from Barraute township in northwestern Quebec.

• **Phosphates:** Construction has begun on Texas City Chemicals' \$6 million phosphate plant in Texas City. If work goes according to schedule, the facilities will be onstream by June, 1953, producing 70,000 tons per year of dicalcium phosphate (50,000 tons feed grade) plus 3,000 tons/year of sodium silicofluoride. Sulfuric source will be spent acid pipelined in. (Another plant unit will produce more than 115,000 tons/year of 98% sulfuric.)

• As with Texas City, sulfuric supply (from Consolidated Chemical Industries) determined the location of International Minerals & Chemicals' superphosphate plant at North Fort



Sign of the Times

DOUBTING THOMASES who don't believe all they hear about expanding chemical industry construction, can line up and take a look at one part of the engineering department in the new building of Blaw-Knox' Chemical Plants Division. This is just a segment of a section of the engineering department's space in the new Pittsburgh headquarters of Blaw-Knox' fastest growing division.



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Worth, which went into operation last month. Annual production is estimated at 60,000 tons—but this includes both super and the mixed fertilizers to be compounded there.

Copper: Turner Construction has been awarded a \$57 million contract for development of Copper Range's Ontonagon County, Mich. Work will include mine facilities, smelter, power plant and a townsite to accommodate 3,000 workers.

Cat Cracking: Sunray Oil has begun construction of its new \$16 million refinery near Corpus Christi, Tex. The cat cracker will have a 25,000-bbl. daily crude capacity.

• Delta Refining has let a \$1.5 million contract for installation of a cat cracking system at its Memphis, Tenn., refinery.

FOREIGN.

Refinery: Plans for Anglo-Iranian Oil Co. Ltd.'s new \$90 million refinery in Australia are rolling along at a faster clip following the Western Australian Parliament's ratification of the agreement between the State Government and the oil company.

The plant is to be constructed with a capacity of 3 million tons per year at Kwinana near Fremantle—an ideal location for receiving tankers carrying crude oil from the Middle East. Anglo-Iranian expects the plant, when in full production, to meet the requirements of the company's Australian associates, Commonwealth Oil Refineries Ltd., and the British Petroleum Co. of New Zealand.

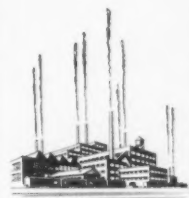
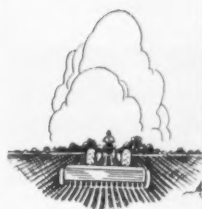
Aluminum: The government of Mexico, through its minister of hydraulic resources, has announced its intention of constructing an aluminum plant in the Papaloapan area south of Veracruz. The aluminum plant, to be powered from flood control dams, will be the largest in Latin America.

Sulfur: The Geological Survey of India reports that several areas have been spotted as probable sources of sulfur. More detailed investigations have already begun at the most promising places such as Amjhor, Karwar in North Canara, Chitaldrug in Mysore, Polur in North Arcot and Wynaad in the Nilgiris, Madras.

Magnesia: A geological survey report confirms the existence of a notable deposit of unusually pure magnesia (gibbsite) at Urepel in the French Pyrenees, only a mile across the border from Spain. A group of French inter-

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ests, including Societe des Refractaires de Valencennes, hopes to begin operations soon, plans to build a refining plant at the cost of \$475,000. The deposit, the first to be discovered in France, is thought to be an extension of Spanish magnesia deposits which are already being worked.

KEY CHANGES . . .

James F. Stiles, Jr.: To chairman of the board of directors and treasurer, Abbott Labs.

Elmer B. Vliet: From director of control, to vice president and scientific administrator, Abbott Labs.

Wilbur H. Norton: From vice president, to president, R. M. Hollingshead Corp.

I. R. Hollenberg: From executive vice president, to president, Van Dyk & Co., Inc.

Eugene N. Beesley: To director, Eli Lilly & Co.

George R. Gilbert: From export manager, to vice president in charge of international operations, Schenley Labs., Inc.

Victor A. Hann: To executive vice president, The Welsbach Corp.

Herman A. Bruson: To manager, organic research dept., Olin Industries, Inc.

C. W. Gayler: To technical superintendent, nylon plant, Chemstrand Corp.

A. Wesley Hoge: To head, process design, Houdry Process Corp.

David B. Ardern: To head, technical service, Houdry Process Corp.

Fred W. Fraley: To deputy director, chemical div., National Production Authority. He is vice president in charge of sales, Diamond Alkali Co.

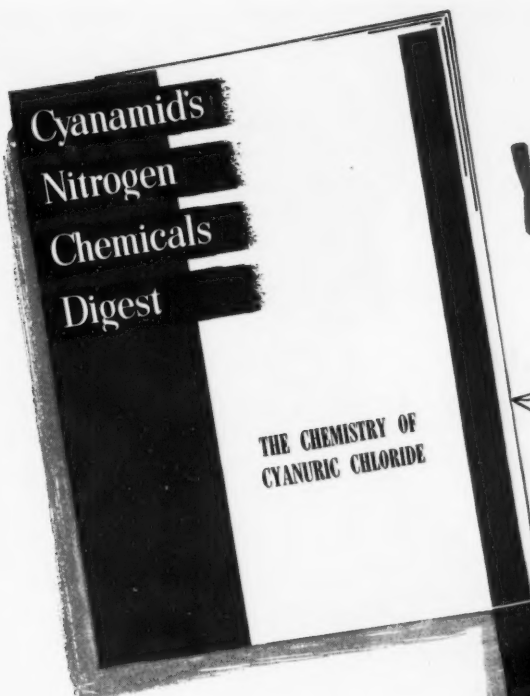
George E. Holbrook: To deputy director, chemical div., National Production Authority. He is assistant director, development dept., E. I. du Pont de Nemours & Co.

E. W. R. Steacie: To head, National Research Council, Canada.

DIED

Lewis Warrington Chubb: Director emeritus of Westinghouse Research Labs. He died April 2 at his home.

Robert C. Charlton: Chief chemist and director of chemical control, American Agricultural Chemical Co. He died suddenly March 25, in Elizabeth, N.J.



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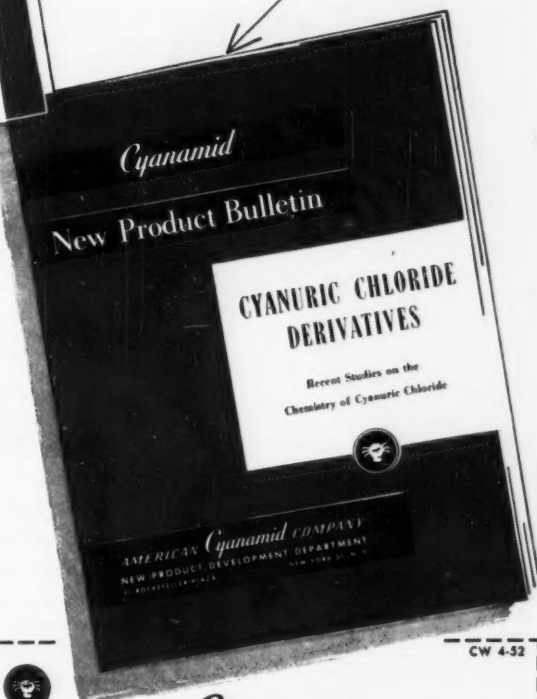
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RESEARCH

A Helping Hand

Because of a sharp slash in appropriations, industry now is footing part of the Bureau of Mines' synthetic fuels research bill.

Budget outlook for next year is better, but outside aid will probably be needed for some time. Completion of synthetic fuels research is a year or two off at best.

Industry's stake in government is more than a high-sounding and slightly nebulous phrase. In at least one case, it can be expressed in cold cash—over and above taxes. Cause of this somewhat unconventional state of affairs is simple enough: a Congressional cut in the appropriation for Fuels-Technology Division of the Bureau of Mines for the current fiscal year.

Congress trimmed the projected

add to nuclear technology know-how.

The Westinghouse aid was justified on the grounds of national defense. Except for synthetic fuels research, the Bruceton facilities are only permitted to operate in furtherance of the defense effort.

No Novelty: Precedent exists in Bureau of Mines' annals for acceptance of aid from without. Bruceton did it in connection with hydrogenation studies in 1938 and 1939. Angel at that time was Jones and Laughlin Steel Corp. Again in 1940, a fiscal boost was accepted from Koppers Co.

Like all transactions with the Federal government, the Bruceton grants had to go through channels. Here's what that means: First, the scheme must be passed on by the Secretary of the Interior. If he approves, the companies pay in advance to the Treasurer of the U.S., not the Bureau of Mines or Interior Department.

Expenditures from the fund then are made by the government according to established procedure. Contributing organizations receive periodic financial statements, are entitled to refunds in the event of a cash surplus on completion of work. But they must waive patent rights, agree to complete publication of results.

Outlook for Federal appropriations for the coming fiscal year (beginning July 1) is improved. Even so, it looks as if some outside aid will be needed to push the synthetic fuels research program. Completion of the work will take at least another year, probably two.

Quick Comeback

The bulk of the pharmaceutical industry, momentarily stunned by the recent TB drug disclosures (CW, Mar. 8), is now making up for lost time. New manufacturers, a new process and plans for greater raw material availability highlight today's isonicotinic acid hydrazide picture.

Biggest news in the field is the entry into active competition of Chas. Pfizer & Co. (Brooklyn, N.Y.).

Production of Pfizer's isonicotinic



HENRY H. STORCH: Industry stepped into the breach.

outlay of \$1.3 million almost 25% to an even \$1 million. One million dollars may be a nice round figure, but apparently inadequate for smooth operation of the Division's development program. In Bruceton, Pa., this week, regional fuels-technology chief, Henry H. Storch, told CW that the slash would have lopped 80 to 100 off his 200-member staff—a near crippling blow.

Fortunately, this gloomy prospect never materialized. Industry stepped into the breach, contributed generously. Companies like Pittsburgh Coke and Chemical and Pittsburgh Consolidation Coal, with obvious concern for synthetic fuels progress, led the way. But Westinghouse Electric gave for another reason: It felt Bruceton could

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RESEARCH

acid hydrazide, which answers to the name Cotinazin, is expected to reach 40 million tablets a month by the end of May. And according to Pfizer President John E. McKeen, the figure could be 100 million tablets a month by the end of this year, if the demand exists.

Almost coincidentally with the Pfizer revelation came word of Winthrop Products Inc.'s new Dinacrin isonicotinic acid hydrazide. Winthrop medical director Jaime Pi-Sunyer disclosed that it has shipped 23,000 tablets of the new drug to Venezuela for clinical experimentation. Additional lots have been flown to other South and Central American countries for the same purpose.

Still another newly revealed isonicotinic acid hydrazide producer is Smith-New York Co., Inc. (Freeport, N.Y.). Smith-New York says it was in production a short time after the break of the TB drug news, turning out sample quantities of the hydrazide for one of the major pharmaceutical concerns.

Repercussions: This striking surge of manufacturing activity is naturally reverberating down to the raw material level of operations. Reilly Tar & Chemical Corp. (Indianapolis, Ind.), producer of intermediate isonicotinic acid, is expanding its present facilities, blueprinting new plant construction to keep pace with demand for the drug.

But coal tar won't have a raw material monopoly on isonicotinic acid hydrazide manufacture. Processes starting from acetaldehyde and ammonia (to form the required pyridine nucleus) will doubtless snare a portion of the trade. Pfizer, however, has just unveiled still another process: a multistep synthesis based on citric acid. But that's still several months off; right now Pfizer produces the drug from tar chemicals.

Overseas Too: Research, leading to the successful development of the new TB drugs, apparently wasn't exclusively American. Reports from abroad indicate that Spanish researchers have been working with isonicotinic acid hydrazide for more than three years. Their efforts produced an experimental drug known only as FSR-3.

Laboratorio Faes in Bilbao (Spain) gets the credit for FSR-3. More than a year ago, in March of 1951, Faes began its first clinical tests with the new drug. By June of last year, eight of ten patients who had received the drug were pronounced cured and released from the hospital. Sensitivity to the hydrazide forced physicians to discontinue treatment in two cases.

Like its American counterparts, FSR-3 is still in the experimental stage. But it stands a good chance of

being the first to enter the European commercial market. Laboratorio Faes says it is ready to supply home demand for FSR-3 just as soon as the Spanish government gives the nod.

Cotton Heard From

Synthetics have made the big noise in fiber research in recent years. But work in other fields of fiber development hasn't lagged. Now a modified natural fiber is getting some deserved attention.

It's partially acetylated cotton, the subject of a long and intensive investigation at U.S. Department of Agriculture's Southern Regional Research Laboratory, New Orleans, La.

Strictly speaking, partially acetylated cotton is not a shiny new development. Acetylated cotton has been made before (*CI, May 1948, p. 734*), offered on a small commercial scale in England. But success was definitely limited. Since, however, SRRL researchers have worked up new applications and manufacturing methods.

By the SRRL technique, the product is made by acetylating cotton in fiber, yarn, or fabric form with controlled quantities of acetic anhydride. Properties of the partially acetylated product are not fully characterized; evaluation is still in progress.

But this much is known: Heat resistance is good; the fiber retains most of its original strength for days at 160 C. Rot and mildew resistance is reported by SRRL to be "far superior" to cotton; partially acetylated cotton, used as sandbags, was in serviceable condition after a year on the ground. Resistance to chemicals, especially acids, is better than that of untreated cotton. And the same is true of electrical insulating properties.

Potential uses based on these attributes are not hard to find. The fiber's heat resistance probably could be put to good use in laundry press covers and pads, rubberized cloth and various kinds of gaskets and packing. Its rot and mildew resistance suggests application in fish nets, twine, clothes lines, sand and barricade bags.

But the picture has some dark spots too. Cost could be one; a large chemical company estimates a selling price of \$1 a pound for partially acetylated cotton, based on a cost of 40¢ a pound for cotton. Other liabilities: impaired launderability (especially in alkaline solution) and one or two troublesome processing characteristics.

New Polymers: A new and interesting family of polymers is the outgrowth of investigations into the free radical



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RESEARCH

chemistry of carbon monoxide by researchers of the Du Pont Co. Their finding: Carbon monoxide copolymerizes with ethylene oxide to form novel polyketones.

The polymers are composed of $-CO-$ and $-CH_2CH_2-$ units, display the chemical reactivity of carbonyl compounds, take the form of liquids or high-molecular weight solids (depending on molecular weight and the proportion of copolymerized carbon monoxide).

High-pressure hydrogenation of the polyketones yields hydroxylated analogs; reaction with hydrogen cyanide gives corresponding polycyanohydrins; oxidation produces polymethylene dicarboxylic acids ranging from glutaric to sebacic.

Cortisone Again: Here are some late details of Upjohn Co.'s spanking new (CW, Apr. 12) microbiological route to cortisone. Progesterone, one of the female hormones, was the principal steroid used in the company's experiments with the new process. Fermentation for a period of 24 to 48 hours in a "lactalbumin digest-dextrose-corn-steep medium" produced what Upjohn researchers call "a new 11-oxygenated steroid intermediate . . . for conversion to the cortical hormones."

The Upjohn group adds: "Similar microbiological oxygenations at carbon 11 . . . have been achieved on other steroid substrates, including an-

drostenedione, 11-desoxy-17-hydroxycorticosterone (Reichstein's substance S) and 11-desoxycorticosterone." All of these substances (and progesterone as well) can be synthesized from relatively abundant animal and vegetable steroids (i.e. cholesterol, stigmasterol, etc.).

Now Commercial: Add nonyl phenol to Rohm & Haas Co.'s line of commercially available alkyl phenols. Major markets for the chemical are in the manufacture of oil additives and wetting and emulsifying agents. Potential outlets: intermediate in the production of synthetic resins, fungicides, germicides, pharmaceuticals, dyes and rubber chemicals. A liquid at room temperatures, nonyl phenol offers handling advantages over the more common solid alkyl phenols.

Combined Attack: A joint program of titanium research has just been launched by Glidden Co. (Cleveland, O.) and Bohn Aluminum and Brass Corp. (Detroit, Mich.). Both companies have conducted titanium research independently for some time, are well beyond preliminaries. First objective of the cooperative effort is the production of the pure, ductile metal. Cost of the new program and all results obtained will be shared equally (see page 19).

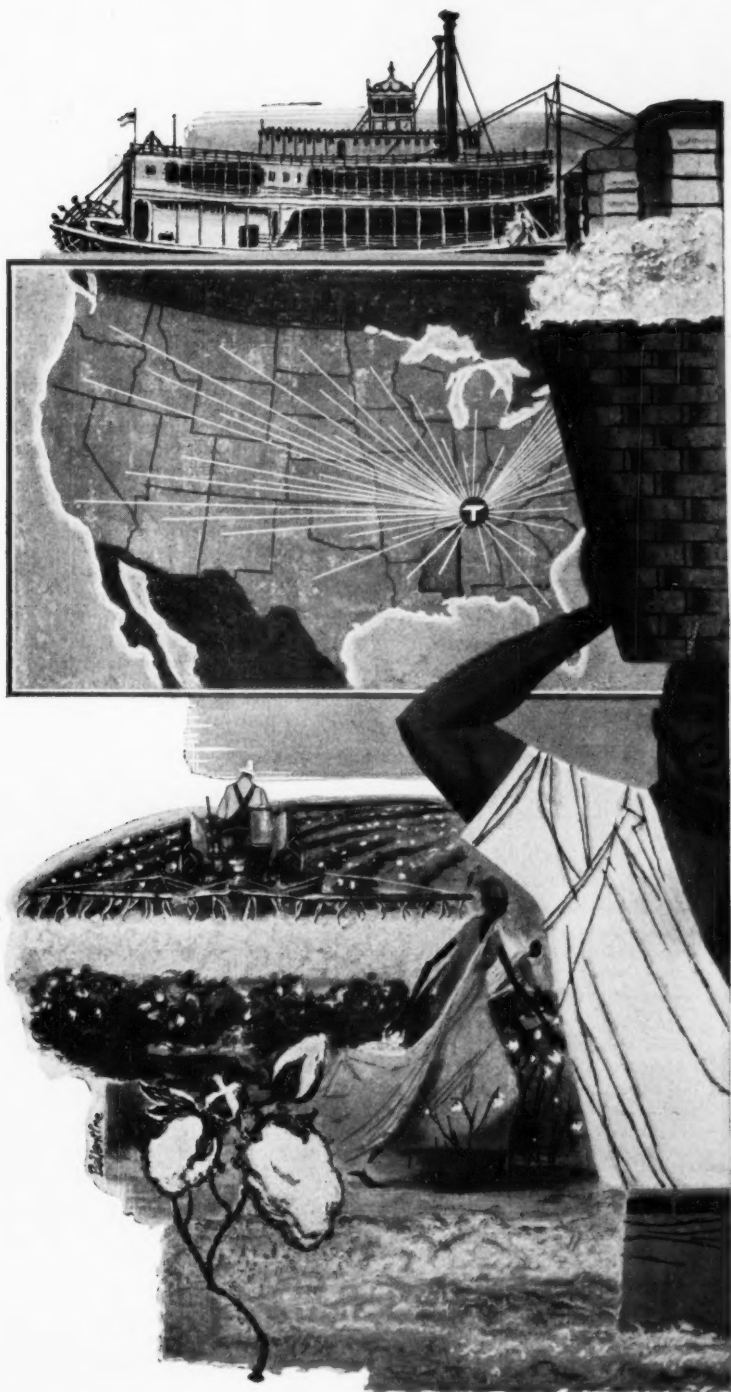
Lab Aid: A new sodium sulfide, more



Service With a Sniff

A NEW ODOROUS ADDITION to the collection of A. Boake, Roberts & Co. Ltd. is characterized by chemist Adele Webster. The London chemical firm keeps a collection of more than 8,000 odorous substances for the use of its clients—manufacturers of perfumes, soaps, detergents and disinfectants. Also catalogued in its library of odors is a complete record of scents used in formulating perfumes and industrial odorants.

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Protecting cotton is not all that Tennessee does in Mississippi. For instance, Tennessee ships Tensulate Insulation and Tensulate Perlite, a light weight aggregate, for the building industry. And you will find products from Tennessee in every state in the country doing a wide variety of jobs. That's why Tennessee is known from Coast to Coast as the industry that serves all industry.



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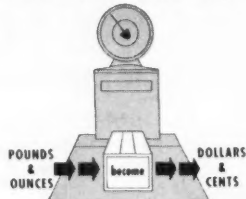
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HEADQUARTERS FOR SCALES

RESEARCH

stable than previous forms, has been developed by J. T. Baker Chemical Co. (Phillipsburg, N.J.) for laboratory use.

Secret of the compound's stability is its water content. It's a pentahydrate, contains four molecules of water less than older commercial grades. Available in reagent grade, the new sodium sulfide won't melt or discolor in storage at temperatures up to 90 C.

U. V. Armor: A new patent (U.S. 2,568,894) points up the value of 4-benzoyl resorcinol as an ultra-violet screening agent. The compound may be added to paints, waxes and textiles. Transparent plastic films containing 0.1% to 10% of the substance afford good color-fade protection.

Literature Boon: Science-Technology Div. of Special Libraries Assoc. (New York, N.Y.) has organized an institute to deal with the administration and use of technical research reports and their importance in library service. The new group will convene in New York on May 30 and 31 to hear speakers representing government agencies, university and industrial libraries active in the dissemination of technical reports.

Expanding: U.S. Bureau of Mines will get a new experiment station at Morgantown, W.Va., to house research on the production of synthesis gas.

Chick Check: Poultry nutrition investigators will be interested in results of chicken metabolism studies at U.S. Department of Agriculture's Bureau of Animal Husbandry. Bureau researchers found that chickens are able to utilize inorganic sulfur in the building of body proteins. Previously, it was believed that only green plants and certain microorganisms were able to manufacture sulfur-containing amino acids like cystine and methionine.

Here's how the discovery was made: Very dilute sulfuric acid containing isotopic sulfur was injected into hens. Protein isolated from the eggs laid by these hens was found to contain the radioactive sulfur. But this was hardly conclusive; the egg protein is hard to purify, might easily have been contaminated with the radioactive sulfuric acid.

Protein was then broken down to its component amino acids and the sulfur-containing members—cystine and methionine—separated. Methionine was entirely free of radioactivity; cystine was highly radioactive. Conclusion: Hens are able to use inorganic sulfate to make cystine, but not methionine.

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WATER
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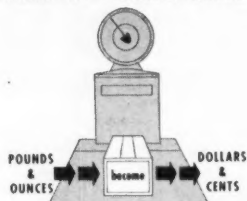
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Formula
for profitable
chemical production

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(Na Cl)

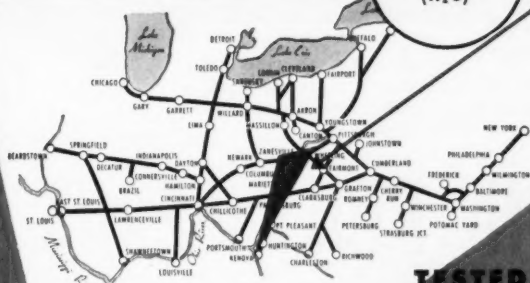
POWER

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PRODUCTION....

Para Steps Out

More benzene from petroleum brings more mixed xylenes, puts them squarely in the commercial spotlight.

But for maximum commercial utility, the consensus of opinion is that the isomers must be separated.

That's why Humble Oil is putting up a new plant to make 25 million lbs. a year of para xylene.

Tapping petroleum as a raw material for benzene has put xylenes squarely in the spotlight, for, in many cases, petroleum benzene plants are designed to deliver huge quantities of mixed xylenes. But although the mixed isomers won some favor during World War II—as additives for aviation gasoline and lacquer solvents—it is generally agreed that for maximum commercial utility the xylenes must be separated.

That's why Oronite Chemical has held a unique and enviable position in the industry for several years: It has put ortho xylene to good use as a raw material for its own production of phthalic anhydride and it has found Du Pont an eager customer for para xylene (which is oxidized to terephthalic acid, a raw material for Dacron synthetic fiber).

Up 'til now, Oronite has been the only commercial producer of para xylene; but Humble Oil and Refining Co. is currently operating a pilot plant to turn out 10,000-20,000 lbs. of para xylene a month, has decided to put up a commercial plant rated at 25 million lbs. a year.

Humble's plant, scheduled for completion in the second quarter of 1953, will be located at the Baytown refinery site. The bulk of the output will go to Du Pont's Kinston (N. C.) plant for making Dacron fiber.

No Trick: Separation of ortho xylene from meta and para presents no great problem since there is an appreciable spread in boiling points* and fractional distillation can be employed. But fractional distillation can't be used to separate the para from the meta. Fractional crystallization, on the other hand, is difficult because the para-meta mixture forms a solid eutectic at about -75 F.

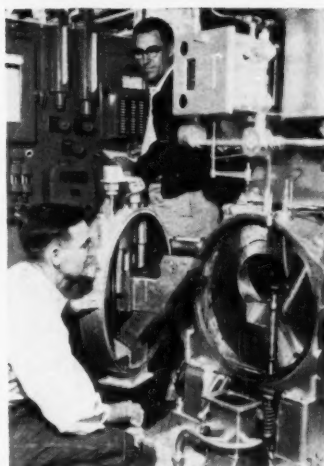
Several means have been proposed for separating the para-meta isomers; Monsanto, for instance, has recently patented a chemical separation (U.S. Pat. 2,585,525). But Humble is putting its faith in a straight frac-

tional crystallization even though only half the para xylene content of the feed stock is recovered as para concentrate because of the eutectic formation.

As developed in its pilot plant, the Humble process consists of hydroforming select naphthas (b.p., 200-300 F.) to yield a crude concentrate made up of ortho, meta and para xylenes, ethyl benzene and small amounts (about 1%) of non-aromatics. Separation and purification is carried out in two steps.

In the first step, the para xylene content of the feed stock is increased from 15-20% to 75-85%. The material is sent through a precooling where the temperature is lowered to -40 F, then to an exchanger where it is further reduced to -95 F. Ethylene is employed as the refrigerant.

Most of the para xylene crystallizes out in the exchanger, but additional crystallization takes place in the holding tank held at -95 F. From the holding tank, which doubles as a surge drum, the crystals are discharged into a continuous centrifuge. The mother liquor is sent back to the refinery for processing and the



HUMBLE PILOT PLANT: Output goes to Du Pont's Dacron.

crystals (75-85% para xylene) are melted for ease in handling.

Second step of the process entails recrystallization to boost purity to 95%. Equipment used is similar to that in the first step but, with the exception of the centrifuge, is only one-tenth as large. Other differences: Propane is used as the refrigerant instead of ethylene; and the mother liquor, since it contains 40-50% para xylene, is sent back to the first step for recycling.

Construction Quirks: Although there are no corrosion problems, the low temperatures necessitate special materials of construction. Accordingly, the centrifuge for the commercial plant will be fabricated from Type 304 stainless and the heat exchangers, piping and low-temperature kettles from 3½% nickel steel.

Organized for a Push

Although well established in England and Canada, Linatex rubber is comparatively unknown here. Now, however, Linatex Corp. of America (Rockville, Conn.) has been set up to push distribution in this country. Its ease of bonding and resistance to abrasion and corrosion should make it a natural for a host of process applications.

Linatex was formally established in December, is just now swinging into production. It is headed up by Alex Jackson, who is also president of Wilkinson Linatex Co., Ltd. of Canada. Neither the American nor Canadian company is connected financially with England's Wilkinson Rubber Linatex, Ltd.

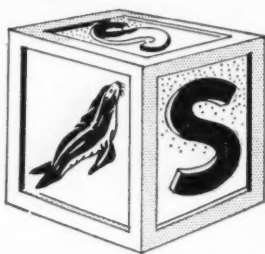
Stronger Than Steel: The record that Linatex rubber has made for itself is impressive. Jackson says, for

instance, that in resisting abrasion from particles smaller than one inch in diameter, it lasts at least four times as long as cast iron or steel. Another big plus for the rubber is the fact that it can be bonded to itself—or to wood, metal, cement or other material—by simple application of a cold cement. That of course makes for easy installation and cheap maintenance.

Linatex rubber is resistant to almost all the inorganic acids, most strong alkalis and sea water. It is unaffected by alcohol, glycerine, wax or vaseline and will stand up under any climatic conditions.

But like everything else, the rubber has its limitations. It will perform suitably under saturated steam temperatures up to 50 psi. for reason-

* Ortho xylene boils at 142.7 C, meta at 139.3, para at 133.4.



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able periods, but its abrasion resistance falls down under exposure to dry heat. It is not recommended for applications at dry temperatures over 170 F. Moreover, it will disintegrate rapidly under the repeated impact of heavy bodies (e.g. ore chutes handling large pieces of rock) unless sufficiently thick. It swells on contact with gasoline or oils and is attacked by organic acids and strong oxidizing agents like nitric acid.

In England, the rubber has been used to line ball mills, chutes, hoppers, pumps, valves, fittings, pipes, tanks and other vessels where corrosion or abrasion or a combination of the two is encountered. In Scotland, a number of tanks for holding boiling muriatic acid were lined with

or (3) contract to do the job in the customer's plant; or (4) do it in the company's plant in Rockville.

Third Try: Actually, this marks the third attempt to commercialize Linatex rubber in this country; previous efforts were hampered by the depression and World War II. The process for making the rubber was developed in Malaya shortly after the first war by a young Englishman, Bernard Wilkinson. He tried it as a lining for chutes and buckets on the Malayan tin dredges and found it would outwear anything that was then on the market.

Oddly enough, the rubber cannot be prepared from preserved latex. Apparently, the key ingredient is made ineffective by the addition of an inhibitor. As a result, the Linatex rubber must be processed in a rubber-growing country. Linatex Corp. will import it from Malaya, fabricate it at its Rockville plant.



ALEX JACKSON: After a war and a depression, a third attempt.

a 1/8 in. coat of Linatex rubber. After five years of continuous operation, the tanks showed no signs of wear. So far, the biggest single customer in Canada has been the asbestos industry, where it is used to line cones and flues.

Jackson foresees the mining industry as a big market for Linatex rubber in this country, but he is not overlooking the chemical industry and other segments of the process industries. He figures the rubber can compete costwise with stainless and glass-lined steel, thinks it is better for many applications and hopes it can move in on some of their markets.

He plans to turn out sheets of the rubber ranging from 1/32 in. to 1/2 in. thick; thicker sheets can be laminated if necessary. And he plans to sell it by four methods: (1) He will sell the sheets and adhesives with written instructions for installation; or (2) send an instructor out with the sheets;

Sonic Control

"A good idea for a small company." That seemed to be the stock answer management at Raytheon Mfg. Co. had for its two young employees, Stanley Rich and Wilfred Roth. Rich and Roth finally saw the light, pooled their resources (\$10,000) and started the Rich-Roth Laboratories (East Hartford, Conn.). Their present bid for fame: the Ultra-Viscoson, an instrument for continuous and automatic measurement of viscosity.

The Ultra-Viscoson is priced at \$1,000—exclusive of installation costs—but Rich and Roth figure the instrument will pay its own way in process and product control work. Actually, the instrument has been on the market for just about a year, but the two men were careful about making claims for it until it had been field-tested for a period of time. As Rich frankly admits: "We have to do that in a small company. Otherwise we'd be out of business tomorrow."

Keeping It Simple: In operation, say Rich and Roth, the Ultra-Viscoson is quite simple. In fact they designed it so that it can be operated without special training.

Here's how it works: A probe made of a steel alloy protrudes from a stainless steel barrel. The probe is inserted in the line or kettle, and ultrasonic waves produce longitudinal vibrations in it. If the probe is surrounded by a sufficient quantity of liquid, minute layers slip back and forth over one another at ultrasonic frequency and in bi-directional motion. An electronic computer calculates the energy needed to produce the motion. And since



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For Solvent Power

A large number of solvent applications are possible with the polypropylene glycols because they are solvents for many organic materials and are compatible with many vegetable oils, natural waxes, and resins. They are currently being used as solvents for resin-type inks.

For Coupling Action

Polypropylene glycols 1025 and 2025 are only slightly soluble in water but the lower molecular weight compounds, 150 and 425, are water-soluble and have many uses in the preparation of soluble oils.


For Chemical Reactivity


The chemical reactivity of these products centers around the two hydroxyl groups. They are used to make non-ionic surface-active agents, resins, plasticizers, and non-volatile herbicidal preparations.

Availability

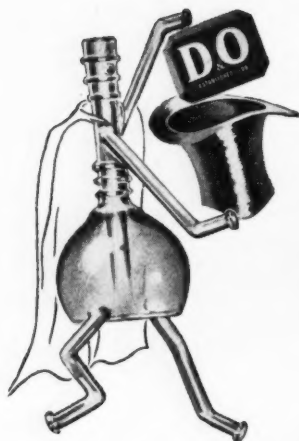
The polypropylene glycols are available in four closely controlled molecular weight ranges. The numbers 150, 425, 1025, and 2025, by which they are designated, represent their average molecular weights. All four products are available for immediate shipment in tank car quantities.

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RICH AND ROTH: Good ideas for small companies.

the energy is proportional to the viscosity of the liquid, the computer gives a continuous, automatic reading of viscosity.

When used for measuring Newtonian liquids, the Ultra-Viscoson measures viscosity from 0 to 50,000 centipoises times the density (in grams per cc.) in four ranges: 0-50, 0-500, 0-5,000, 0-50,000. Absolute accuracy in the 0-50 range is said to be within 2%.

For non-Newtonian liquids (like starch, printing inks, drilling muds), the instrument measures viscosity over a wider range. Where the liquids themselves have reproducible properties, reproducibility of the instrument is said to be within 2%. And, say Rich and Roth, it permits a degree of quality control that was formerly thought impossible.

EQUIPMENT

Turbo-Dryers: The addition to its Turbo-Dryer line, a new, larger, packaged unit that increases evaporative capacities from two to four times over current models, is now being marketed by the Wyssmont Co. (Long Island City, N. Y.), drying engineers. Wyssmont is the manufacturer of the continuous-transfer type vertical Turbo-Dryer which handles fragile or heat-sensitive materials, ranging from thick slurries to fine powders, through repeated piling and spreading.

Known as the "N" series, the new Dryers will be furnished completely insulated, are provided with variable-speed drives for both rotation of the tray structure and to change RPM of the turbo-fans. Trays are spun from

one piece of sheet metal for easier cleaning.

Portable Refrigerating Unit: Mayer Refrigerating Engineers (Rutherford, N. J.) has just developed a new portable refrigerating system. This unit, the "Junior" Chil-er, automatically recirculates cold water, brine and other liquid coolants. It is also available with a heating element for recirculating hot water.

The Junior Chil-er, available in seven models, has capacities from 1 to 10 gpm. Temperature ranges: water, 38 to 60 F; brine, -10 to 38 F; with heating element, 60 to 140 F.

Micro-Microammeter: Beckman Instruments, Inc. (South Pasadena, Calif.) now has available a new-type, highly stable Micro-Microammeter for measuring extremely small direct currents in the range of 0.3 microampere to 0.3 micro-microampere full scale with an absolute accuracy better than 5% in all ranges. An AC-operated instrument, it is known as the Beckman Model V Micro-Microammeter.

Exhaust Fan: Designed to remove toxic fumes, dirt, heat and smoke, Standard Electric Mfg. Co., Inc. (West Berlin, N. J.) has just brought out a general-purpose fan having a number of improvements. The motor is outside the air stream and is explosion-proof. It is available with enclosed or open-type motors and meets UL specifications for spray booths.

Features include sealed SKF bearings in readily replaceable flange construction, double-angle motor support

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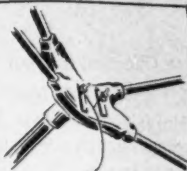
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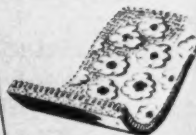
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PRODUCTION

to minimize vibration, and heavy cast aluminum fan blade in sizes from 18" to 42". Motors are available in ¼ to 7½ hp.

Iolyte Polyester: Industrial Organics Corp. (Maspeth, N. Y.) is now producing Iolyte polyester laminated sheets in continuous strips of any desired length. It is available in sheets, rolls or tape in thicknesses of 8 mils to ¼" or more.

The material has the tensile strength of steel but is only one-fifth as heavy. It will withstand continuous exposure to temperatures up to 350 F and has low water absorption, good electrical properties, is essentially shatterproof and scratchproof and is resistant to chemicals.

New Pump: Peerless Pump Division of Food Machinery and Chemical Corp. (Los Angeles) has introduced a new line of split-case horizontal pumps. Mechanical shaft seals instead of conventional stuffing boxes, says the company, means savings on floor space, shorter shaft lengths, improved performance and easier maintenance.

Pressure Transducers: Servomechanisms, Inc. (Westbury, N. Y.) is now marketing a static pressure transducer (TRIO1) and a differential pressure transducer (TRIO2). They are 400-cycle instruments used to convert air pressure (either static or differential) into electrical signals for use in instrumentation. Big features, says the company: reliable and precision performance in a rugged compact instrument.

Meeting the Law: Permutit Co. (New York City) has designed a system to prevent excessive rates of flow during backwashing or rinsing and to eliminate chances of back-siphonage of waste water. It conforms with state and local laws against back-siphonage. The arrangement is now standard on all the company's sodium zeolite softeners with diameter of 54" or more. It can be provided for hydrogen zeolite, anion exchange and pressure filter equipment wherever local laws require.

Water Content: Beckman Instruments, Inc. (South Pasadena, Calif.) is pushing distribution of its Beckman Aquameter for measuring water content. Using the Karl Fischer technique, the instrument avoids errors caused by temperature effects sometimes encountered in oven-drying methods. Moreover, says Beckman, it is faster than distillation methods, also simpler and cheaper.

Chemical Week • April 19, 1952

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Sp. Gr. @ 25°C/25°C	0.960	Flash Point, COC, °F.	430
Ref. Index @ 25°C	1.4695	Fire Point, COC, °F.	505
Color, Gardner	3	Viscosity, G.H. @ 25°C	K
Volatile Matter, %	1.2	Viscosity, SUS @ 210°F.	60

CHEMICAL PROPERTIES

Acid Value	4
Iodine Value	75
Sap. Value	159

Suggested Applications: Nitrocellulose plasticizer, cosmetics, hydraulic brake fluids, wetting agents.

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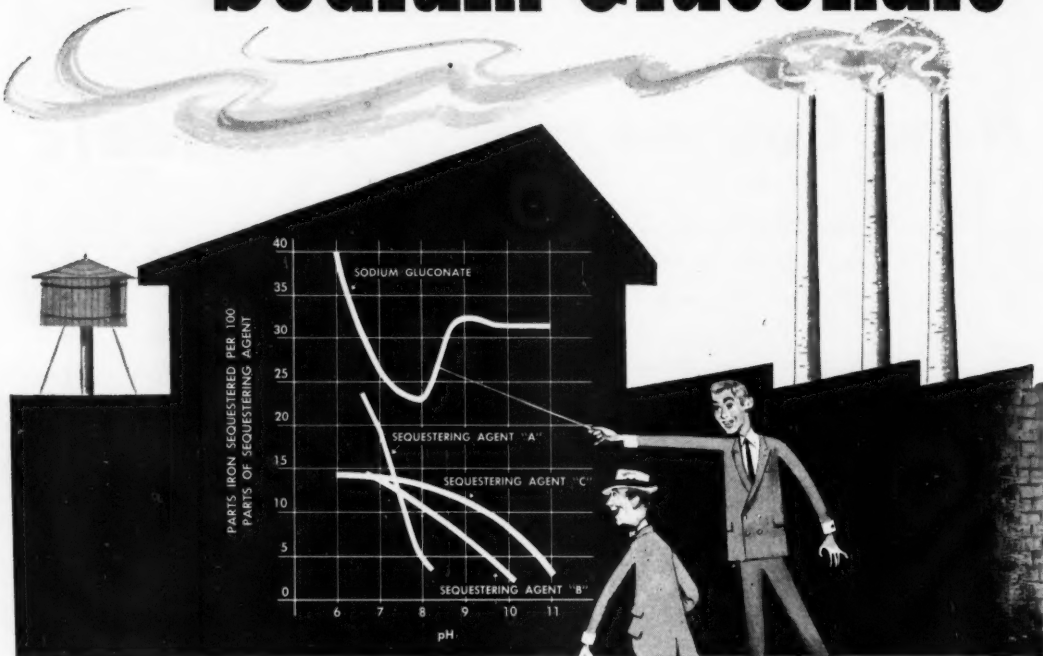
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BOOKS.....

Machinery and Equipment for Rubber and Plastics, Vol. 1, Primary Machinery and Equipment, compiled by R. G. Seaman and A. M. Merrill. *India Rubber World*, New York, N.Y.; 804 pp., \$15.

A summary of engineering information on the primary machines and equipment used by the rubber and plastics industries, the volume outlines design trends, construction principles, operation and maintenance details, and applications for the various types of machines discussed. A listing of manufacturers, along with addresses also appears.

Solubilities of Inorganic and Organic Compounds, Supplement to the third edition, by Atherton Seidell and William F. Line, and with sections by A. W. Francis and Roger G. Bates. D. Van Nostrand Co., Inc., New York, N.Y.; 1,254 pp., \$12.50.

Supplementary volume, organized like the previous two volumes into an inorganic and an organic section, contains solubility data published throughout literature from the years 1939-1949. Contributed chapters discuss solubility factors as applied to industrial as well as theoretical problems.

MEETINGS...

Amer. Zinc Inst., annual meeting, Statler Hotel, St. Louis, Apr. 21-22.

Assn. of Consulting Chemists & Chem. Engrs., general symposium, Belmont Plaza Hotel, N.Y., Apr. 22.

Amer. Ceramic Soc., annual meeting, Pittsburgh, Apr. 27-May 1.

Amer. Oil Chemists' Soc., annual meeting, Shamrock Hotel, Houston, Apr. 28-30.

Amer. Drug Manuf. Assn., annual meeting, Homestead Hotel, Hot Springs, Va., Apr. 28-May 1.

Electrochemical Soc. Inc., spring meeting, Benjamin Franklin Hotel, Phila., May 4-8.

Natl. Air Pollution Symposium, Huntington Hotel, Pasadena, Calif., May 5-6.

Tech. Assn. of the Pulp & Paper Ind., Sherman Hotel, Chicago, May 5-8.

Scientific Apparatus Makers Assn., annual meeting, Edgewater Beach Hotel, Chicago, May 6-9.

Soc. of Cosmetic Chemists, spring meeting, Biltmore Hotel, N.Y., May 15.

Inst. of Paper Chemistry, annual executives' conf., Appleton, Wis., May 15-16.

Amer. Soc. for Quality Control, Syracuse, N.Y., May 22-24.



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SPECIALTIES . . .

In There Plugging

Spring's sizzlingest specialty: Polyvinyl plastic bathtub-to-wall caulking compounds.

Initial retail potential tops \$35 million. follow-up sales look like \$2 million annually.

When the marble washstand and the ball-and-claw foot bathtub were relegated to the junkyard, the shiny new built-in replacements presented a new problem: Providing a durable, water tight seal for the joint between the wall and the fixture.

And polyvinyl chloride caulking compounds that solve that problem are about the hottest specialty items out right now.

The market potential is represented by nearly 35 million improperly installed tubs and showers, plus another 2 million annually replaced or rebuilt

unwanted crack. (Tubes, at \$.75-1.00 give an 8-10-ft. bead.) Flexible, waterproof, it skins over in five minutes, dries in an hour to a tough, glossy white surface.

No primer is needed. The paste—polyvinyl resins, xylene, titanium dioxide pigment—shrinks less than half a percent on drying, is resistant to water, oil, grease, acids, alkalis, and scouring powders. And it can be painted. Small wonder hotel managers and handymen are snapping it up as fast as it can be produced.

Triumph in Tubes: With all its advantages, polyvinyl sealers have been available to the homeowner only a year or so. Similar stuff had been sold for several years, in 55-gallon drums, for industrial caulking jobs, but no one offered it to the small user.

Then last year, American Fluresit, Cincinnati (with Tub Tite) and Seal-Rite Caulking Co., Detroit (with Tile Fix) broke their products in the West Coast almost simultaneously.

Choosing the Coast for introduction because the area—with a high percentage of new homes, all with tubs and showers flush to the wall—had nearly ten times the need of any other region, Fluresit and Seal-Rite were startled by the number of orders. Printers and stenographers putting out the promotional literature begged for free samples.

Quick to get on the bandwagon too were Miracle Adhesives Corp., New York (Tub Caulk), and Shalk Chemical Co., Los Angeles (Tile Paste). Sales continued high—it seemed 99% of all shower booths and tubs were improperly installed.

Broadening the Outlets: Encouraged by the crackling sales on the Coast, sealer makers began nationwide distribution. Some started international selling; Seal-Rite, one of the top producers, has outlets in 16 countries.

Others have recently entered the competition: DeWitt Products Corp. (Dewk) and Armstrong Co. (Kwik Seal), both in Detroit; Dick-Pontius Co., (Tile Cement), Akron; Jaye Mfg. Co. (E-Z Seal).

With more outlets have come more uses. Installers of soda fountains are bonding syrup bowls to bases with the paste instead of more expensive



CAULKING WITH POLYVINYL: Between wall and tub, a \$35 million market.

when the initial market is satisfied. Sales won't be hurt by an upcoming article in one of the pocket-sized consumer magazines (CW Newsletter, Feb. 23) either.

Crack Bill Filler: These new caulkers have such a tasty potential because they do a job that hasn't been done satisfactorily before. Previously used putty and patching plasters dried slowly, shrank, or dried hard to a non-flexing filler that soon chipped out and left the same old crack to mildew and rot.

The polyvinyl sealers do a much neater job. Sold in 4-6-oz. collapsible tubes with applicator snouts, the new compound is laid in a bead on the



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SPECIALTIES

solder. Ventilating equipment makers are noiseproofing exhaust fans with the compound.

One of the early industrial uses points up the versatility of the stuff: Sealing searchlights for tropical airfields was a problem—insects lunched on the linseed oil-pigment caulk previously used; the polyvinyl paste worked fine and wasn't touched by bugs.

Users find it will seal cracks between tile or plaster, and window frames for cabinets. It will cement or repair porcelain, ceramic or rubber tile; wood; plaster board; metal or glass. It can be used to patch chips in refrigerators or other appliances.

The 2 million bathtub replacements per year are an easy market to fall back on, but specialties men think the handyman will find ample uses in addition.

Soil Builder Now

The year-end's big agricultural chemical news was that sodium polyacrylate—in particular, Monsanto's Krilium—showed great promise as a soil conditioner. But it wasn't to be available until next spring, when Monsanto could produce 250,000-500,000 lbs. per year. Then late last month Monsanto decided to start commercial production as soon as possible in some of its present facilities, rather than in a new plant. Now, Wilson Organic Chemicals, Inc., has begun production of a similar soil conditioner, Poly-Ack, is selling it now.

Poly-Ack is a polyacrylate, Wilson (Sayreville, N.J.) says, but the product is its own development. It's the first agricultural chemical the five-year-old company has made.

A gallon weighs nine pounds—that figures to about \$2 per pound, the market development price Monsanto estimated for its Krilium. Wilson is selling Poly-Ack at \$18 a gallon, enough for treating 1,000 square feet of soil.

It expects to distribute Poly-Ack nationally, and has investigated possible foreign markets. Full commercial production has not yet been reached although it is hoped for in a month or two.

Wilson Organics is a young firm, started in 1947 by two ex-Dow men, Bob and Jim Wilson. And though Wilson has concentrated mainly on dyestuff intermediates—it is largest independent producer of monoaminophenol—both its founders worked with agricultural chemicals when they were at Dow.

Monsanto's delay in getting into

commercial production of Krilium has given smaller makers a rare chance to get in on the manufacture of a highly publicized product. There's considerable doubt if one firm, employing only 35-40 people, can meet the demand for a soil conditioner that can do what the polyacrylates are claimed to do. But at least it is trying to supply what the public seems to want.

Fertilizer Word

Policy shift of interest to fertilizer manufacturers is the Virginia Department of Agriculture's new position regarding fertilizer-insecticide mixtures.

The Virginia farm department has decided to discontinue permits for insecticide-fertilizer mixtures. Recommendations for chlordane-fertilizer mixes dated April 9, 1951 are rescinded, and no recommendations for any such mixtures will be made. Makers can distribute any such mixtures only to research personnel at state stations, for their specific test use.

A manufacturer supplying a combination of fertilizer and insecticide to a researcher on official order need not register or pay an inspection fee, but is requested to report all such deliveries to the Virginia Department of Agriculture, Richmond, Va.

No Staining

To prevent abrasion of the soft, pure-aluminum coating on Alclad alloy sheets stored in stacks, producers have long relied on tissues inserted between sheets. This "interleaving" eliminated scratching, but a new problem arose: water staining. Kaiser Aluminum has just come up with a way of treating the interleaves to prevent this staining. Tissues impregnated with 1½%-3% sodium chromate are the answer, according to Kaiser Aluminum & Chemical Corp.'s Division of Metallurgical Research. It has licensed the idea to several paper makers who will soon offer the tissues industry-wide.

Mechanism of the staining has not been determined as yet. Tests show that the stains don't affect the physical properties of aluminum, but they do render the product unsuitable for many fabrications.

Under conditions of moisture, limited air supply and the restrictive pressure in stacked sheets, the stains seems to result.

In a warehouse, for example, temperature changes cause condensation on the metal sheets. The water is drawn into the slim space between layers by capillary attraction. Mois-

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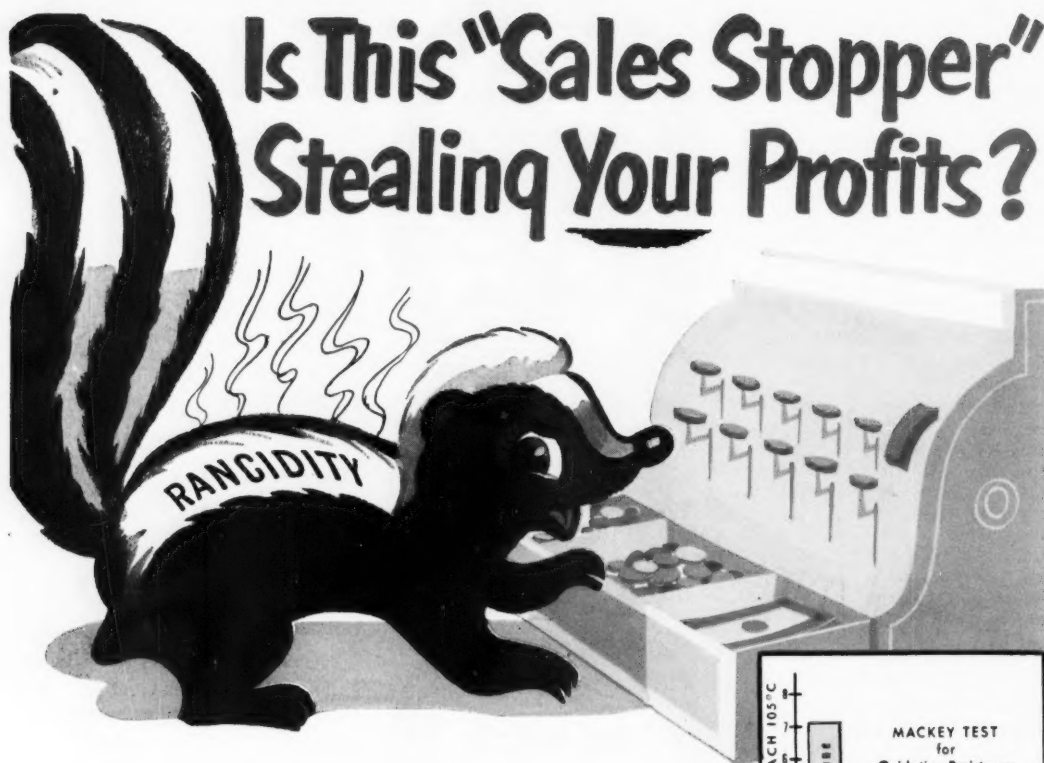
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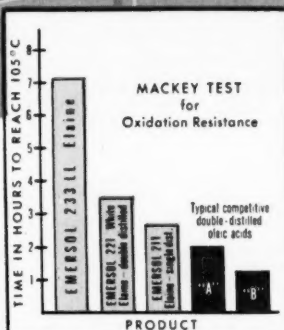
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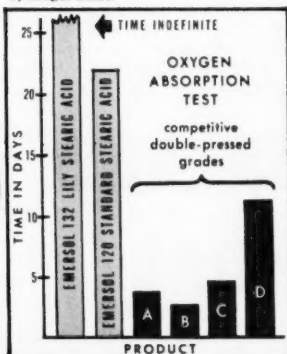
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SPECIALTIES

ture, limited air, stack pressure, then stains soon develop.

First means of combatting the staining was incorporation of petroleum base inhibitors in oil coated onto some sheet products. This worked out fairly well, but the major users of aluminum sheeting, aircraft manufacturers, preferred uncoiled stuff.

Kaiser's investigators went to work on the problem of finding a non-oily inhibitor which could be added to the interleaving tissue. Sodium chromate looked good in the labs; researchers then tried the chromate tissues at their mill in Trentwood, Washington.

Even under extreme conditions, staining was halted. Kaiser lost no time in providing this data to paper makers. Plenty of the tissue should be available soon.

Specialties Special

A valuable addition to the chemical specialties maker's library is the now-available bound reports and proceedings of the December meeting of the Chemical Specialties Manufacturers Associations.

Contents include papers of interest to the field of aerosol packaging, disinfectant and sanitizer making, insecticide formulating, soap and sanitary chemical production, and floor finish manufacturing.

One copy of the book, along with a pamphlet, Agencies and Regulations of Interest to the Pressure Packing Industry, is being mailed to members of the C.S.M.A. Additional copies of the proceedings can be obtained at \$7.50 each from the Association, 110 E. 42nd Street, New York 17, N. Y.; the aerosol pamphlet is \$5.00. (Both prices include postage.)

For Dishwashing: Fame, a new detergent, is just being distributed by its maker, Wyandotte Chemicals. Devised for hand dishwashing, the new product contains one of the Wyandotte's Plurionics, plus inhibitors against the darkening of aluminum, and emollients.

Sequestering Special: The American Dyewood Co. (div. United Dye and Chemical Corp, Chester, Pa.) has acquired manufacturing rights to the MacKenzie process for making glassy phosphates. Full-scale operation should be ready by mid-May for the multiple-use sequestering agents. They will be sold under the name Hy-Phos.

Latex South: General Latex and Chemical Corp., Cambridge, Mass., will open a \$400,000 plant in Dalton,



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Since Sperm Oil has a negligible free fatty acid content, it does not oxidize, harden, or form metallic soaps. As a result, "cementing" of stacked sheet or plate can be prevented by Sperm Oil coating.

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SPECIALTIES

Ga. The 16,000 sq. ft. factory will make latex backing for rugs.

● **Green Stuff Again:** Strong, Cobb & Co., Cleveland pharmaceutical manufacturers, will merge with the American Chlorophyll, Inc., Lake Worth, Fla. The \$4.5 million deal will be consummated April 25; future plans for the firm lie in development of chlorophyll medicinals.

● **Cheese Seize:** The Food and Drug Administration has seized more than 6,000 pounds of process cheese wrapped in a transparent plastic treated with dehydroacetic acid. Government chemists say the acid, used to inhibit mold growth, penetrated the cheese. They claim the acid is about as toxic as phenol. Seizures were made at Kansas City, Chicago, and San Francisco; inspectors are looking for other lots in the same type wrapper.

● **Sweeter Living:** Miliun is the active ingredient of a new aerosol air deodorant now being tested by Gulf Refining Co. Having completed nine-month toxicity tests, Gulf claims Miliun is less toxic than any compound used till now, is more effective too. The product should be ready for fall sales.

● **Consultation and Sales:** Winnebago Chemical Service, Inc. has been formed in Elkhart Lake, Wis., to make and sell pharmaceuticals, and to offer consulting service, in organic and food chemistry.

● **Chlorophyll Underfoot:** Standard Insole, Inc. (Morris Plains, N.J.) will market a chlorophyll treated insole called Chloro-ped.

New Germicide

A new liquid germicide, fungicide, and preservative—methylchlorothymol—has been introduced by the Ottawa Chemical Co. (Toledo, O.). Synthesized by Sol Boyk, who makes the germicide PCMX—para-chloro-metaxyleneol—(CW, June 9) and has promoted its use in this country, the new compound is designed to add disinfectant qualities to floor cleaners, rug shampoos, and the like.

Ottawa Chemical is selling methylchlorothymol under the trade name Ottafect, claims advantages are wide applicability, low cost per phenol coefficient unit (phenol coefficient of Ottafect is 130-250), and ease of handling. Two grades, technical and refined, are available, in 1 and 9 lb. cans, and 450 lb. drums.

Use of Ottawa's other germ killer, PCMX, is on the increase. Originally

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INTER-OFFICE MEMO

To: Purchasing Agent
From: Production Manager

Let's get quotations from V-C

V-C

ELEMENTAL PHOSPHORUS

(WHITE OR YELLOW)

Description: Pure elemental phosphorus, a waxy yellowish solid of distinctive odor. Ignites spontaneously on exposure to air and melts at 43-45°C.

Quality: Guaranteed to contain a minimum of 99.70% elemental phosphorus and not over 0.3% insoluble in benzene. Meets all requirements of joint Army-Navy Specification JAN-P-215.

Containers: Solid in tankcars and drums; wedges in drums; and cones in drums.

Uses: Production of phosphorus halides, phosphorus sulphides, phosphorus pentoxide, red phosphorus, phosphor bronze, phosphor copper and organic compounds of phosphorus.

V-C

85% N. F. GRADE

PHOSPHORIC ACID

Description: A water-white, syrupy liquid. Weight per gallon: 14.1 pounds. Freezing point: 21°C (70°F). Viscosity relative to water at 25°C (77°F): 43.5. Turbidity: None.

Quality: Surpasses specifications of the National Formulary and A. C. S. Analytical Reagents (1941). Meets all U. S. Food and Drug Administration regulations.

Containers: 2200-gallon tanktrucks; 55 and 15-gallon stainless steel drums; 13, 6½ and 5-gallon carboys.

Uses: Drugs and pharmaceuticals, aluminum finishing, catalysts, dental cements, extracts, as a reagent, and wherever high concentration and the utmost in purity are desired.

V-C

75% FOOD GRADE

PHOSPHORIC ACID

Description: A colorless, odorless, water-white liquid. Specific gravity at 20°C (68°F): 1.58. Weight per gallon: 13.2 pounds. Freezing point: -21°C (-6°F). Viscosity relative to water at 25°C (77°F): 21.5. Turbidity: None.

Quality: Guaranteed to contain 75.0% free phosphoric acid. Meets all U. S. Food and Drug Administration regulations.

Containers: 8,000 and 4,000-gallon tankcars; 2200-gallon tanktrucks; 55-gallon stainless steel drums; 13-gallon carboys.

Uses: Metal treatment, antibiotics, food and beverages, acid cleaners, fireproofing compounds, sugar refining, water treatment and many others.

VIRGINIA-CAROLINA CHEMICAL CORPORATION

Chemicals Division: 401 East Main St., Richmond 8, Va.



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SPECIALTIES . . .

most users were employing it in salves and medical preparations. Latest to incorporate it, this time in hand soap, is Essential Chemicals, Inc. (Milwaukee, Wis.), in its Dermex. The product may give hexachlorophene a run in the hand soap field.

Vaporizer Hassle

American Aerovap, Inc., holding a broad patent in lindane vaporizing devices, early this month won an infringement suit against the manufacturer, distributors, and some users of Lin-Air Vaporizers. The suit presages a raft of actions against other vaporizer makers.

Aerovap's (New York) patent appears to cover all devices utilizing heat to volatilize lindane for purposes of insect control, covers a wide range of vaporization rates.

A "half dozen" suits have already been initiated, and Aerovap's executives can point to at least 38 units that are presumably infringements of its patent. It is willing to license, officials say, anyone prepared to meet its stringent installation and use requirements.

Although lindane is one of the least toxic insecticides, the USDA has advised against 24-hour-a-day home use—hence Aerovap's concern over who handles its lindane dispenser. Nevertheless, there are several devices on the market designed for households, although the USDA definitely regards this as hazardous (CW, Mar. 15).

Suitable places for vaporizer installation are, for example, cafeteria kitchens, where personnel seldom remain more than 8-10 hours. Safe vaporization rate, according to Aerovap, is 1 gm/15,000 cu. ft./24 hours.

Ignition Improver

A new ignition improver for diesel fuel, consisting principally of primary amyl nitrates, has been made available in test quantities by Ethyl Corporation.

Ethyl's research shows this: As little as one-tenth of one per cent by volume of the new fuel additive will bring many distillate heating oils within the cetane number of commercial diesel fuels.

The oil industry, hard pushed to meet the demand for diesel fuel with straightrun oils (the requirements for fuel have increased fourfold since 1941, and are expected to double again by 1960, industry spokesmen say) should find the new product a boon. It will permit using many middle distillates for diesel fuels, and current tests show that the additive im-



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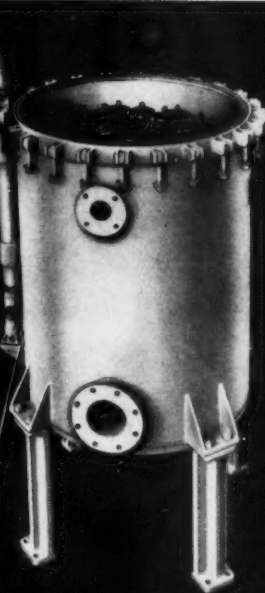
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SPECIALTIES

proves the cetane number regardless of the crude source, refining technique, or sulfur content.

Commercial production of the new improver hinges on the outcome of tests still going on.

No Styrene, No Odor

Odorless synthetic latex has been achieved by Goodyear Tire and Rubber Co. Rubber researchers have been working to remove the undesirable odor from the latex, since that drawback precluded use in foam mattresses and pillows.

Research disclosed odor was due to styrene in the rubber. Elimination of styrene, and producing synthetic latex by a "hot" process, gave an odorless product, but one too weak for most uses. More work finally resulted in a material as odor-free as natural latex, costing less, and sufficiently strong.

The new latex is polybutadiene, made by polymerization at temperatures considerably below conventional rubber. Prices are higher than that of ordinary synthetic material now, but demand is expected to bring the price down.

Diversifying: First step in United Wallpaper Inc.'s (Chicago) diversification plans is formation of a new color division in its Aurora (Ill.) plant. New division, now in production, makes colors for paper coatings and rubber-base paints.

Waterproofer: It's silicones, again, this time for waterproofing textiles. Hydro-pruf is the name for Arkansas Co.'s (Newark, N.J.) new finish, said to be a non-foaming silicone resin. Tested two years, the new product can be applied in hot or cold solutions, cured at 300F, and is claimed to be compatible with urea-formaldehyde, and melamine resins.

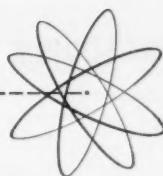
Teflon Gluepots: Teflon, baked on glue pots for glueing machines, will prevent any known type of adhesives from sticking to metals parts so coated, according to tests by General Plastics Corp., (Clifton, N.J.), Empire Box Co., (Garfield, N.J.) and United Paste Co., (Hyde Park, Mass.). Coated pots are not yet available.

PICTURES IN THIS ISSUE:

Cover (top) and p. 27—Bureau of Mines; p. 19—Jean Sardou Photo; p. 30—Wide World Photo; p. 36—Lionel Crawford, McGraw-Hill.



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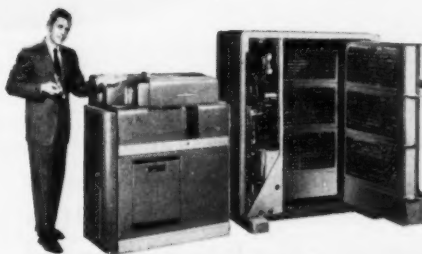


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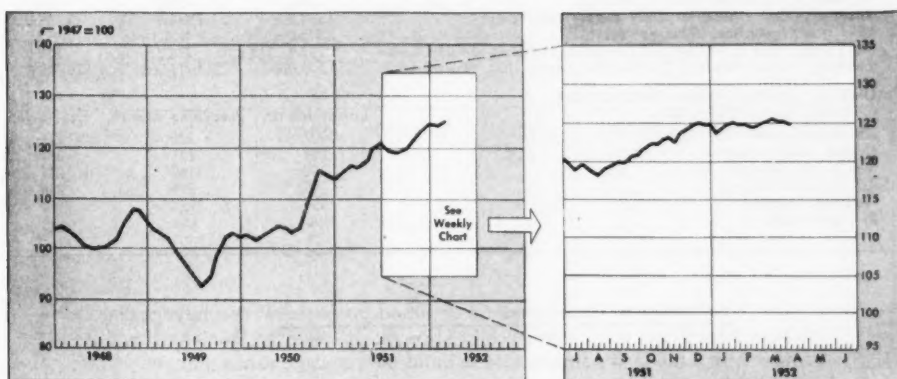
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MARKETS



CW Index of Chemical Output—Basis: Total Man-Hours Worked in Selected Chemical Industries

MARKET LETTER

By this week it is evident that New York has a bad case of business jitters. Not unbridled fear, not brutal pessimism—just jitters.

And the concern over the future is not confined to New York alone (although many other areas of the U. S. are much less disturbed than is mercurial Manhattan).

Washington, for instance, with a political ear to the ground, acted. Secretary of Commerce Sawyer will resume his coast-to-coast junket. His objective: to appraise business conditions, reassure industry that all is not as woeful as some doom-peddlers conjure.

Reassurance he certainly should be able to give. There's no gain-saying that there are soft spots in a spate of commodities. But these too are solid facts:

Capital expenditure activities (which usually employ a full third of all workers in U. S. manufacturing industries) are continuing, barreling along at an all-time high; the full impact of defense spending has yet to be felt; banks are bulging with peak-level personal savings.

It's true too that consumers are "hoarding" their money, not rushing out to buy. They balk at high prices. That's riddled business in many lines. But they've got the money.

Not to be discounted too is that many a seller has not yet acclimated himself to having to sell. Said one chemical sales manager this week: "There's plenty of worms, but we've got to scratch harder, dig deeper."

Adding the three vital-to-good-business factors, it stacks up this way: It's a pretty safe bet that over-all business will continue to be good—mighty good—at least for the rest of this year.

But there will be dislocations in various segments, wide swings in a roster of commodities. There were dislocations on the way up; there'll be others from here on out.

Right now many chemical producers are hamstrung by Government regulations, allocations, restrictions. Necessary they may be but they throttle sales planning.

MARKET LETTER

WEEKLY BUSINESS INDICATORS

	Latest Week	Preceding Week	Year Ago
Chemical Week Output Index (1947=100)	124.6	124.8	119.0
Bituminous Coal Production (Daily average, 1000 tons)	1,537.0	1,644.0	1,755.0
Steel Ingot Production (thousand tons)	2,015.0	N.A.	2,057.0
Stock Price Index of 14 Chemical Companies (Standard & Poor's Corp.)	232.7	236.7	224.9
Chemical Process Industries Construction Awards (Eng. News-Record)	\$11,573,000	\$42,771,000	\$89,024,000

MONTHLY INDICATORS—PRODUCTION (Index 1935-1939=100)

	Latest Month	Preceding Month	Year Ago
All Manufacturing and Mining	222	220	221
Durable Manufactures	284	281	271
Non-durable Manufactures	190	189	201
All Chemical Products	295	299	288
Industrial Chemicals	554	557	510
By-product Coke	N.A.	188	183

Suffering most are makers of liquid products. When buyers don't pick up allocations that means costly storage. It's easy to stack sulfur, for instance, in a field; it's impossible to build new storage tanks quickly.

Even though bulk storage containers are a headache, smaller containers won't be. Collapsible tubes (used for toothpaste, pharmaceuticals, etc.) are heading for easier availability. Aluminum allocations for such tubes will probably be upped 10% in the last quarter. Reason: military demand for aluminum has tapered, 72 million lbs. of new prime production will be in by year's end.

Other packages—paper bags, drums, pails, corrugated cartons—are also now "in balance." Glass bottle shipments have lagged because (1) packers held big inventories (2) general demand has dipped.

Government agencies, too, confirmed the easier supply of some chemical commodities. NPA shucked chemical woodpulp of controls, sees domestic production (17 million tons this year) and imports capable of meeting demand, estimated at no more than 18.4 million tons.

Office of International Trade lifted export restrictions on naval stores with the exception of pine tar, needed for vital mining operations. All ester gums except pentaerythritol abietate were decontrolled too. Reason: Naval stores are now plentiful, export demand is off.

OIT cut back DDT second-quarter export quotas to 5 million lbs. (from 14.7 million in first quarter) to meet coming peak demand.

Nor is DPA satisfied we are emergency-proof in all chemicals. It has set goals calling for healthy expansions in synthetic methanol, formaldehyde, butadiene, calcium carbide, sodium cyanide and chemical grade chromite. They are (with increases over Jan. 1, '51):

- Methanol, 226 million gals. by Jan. '55, a 52 million boost.
- Formaldehyde, 1,675 million lbs. by Jan. '55, up 350 million.
- Butadiene, 162 million lbs. by Jan. '54, a 101 million increase.
- Calcium carbide, 1,230,000 short tons by Jan. '54, up 450,000.
- Sodium cyanide, 91.6 million lbs. by Jan. '55.
- Chromite, 400,000 long tons by end of '52.

SELECTED CHEMICAL MARKET PRICE CHANGES—Week Ending April 12, 1952

UP		Change	New Price		Change	New Price
Tung oil, tank cars		\$.0025	\$.395			
DOWN						
Lauryl chloride, dms., whs., frt. eqld.	.03	.72	Neatsfoot oil, 15°, dms.	\$.04	\$.33	
Palm oil, clarif., dms.	.02	.1125	Soybean oil, alk. ref., tank cars	.0075	.12	

All prices per pound unless quantity is stated

NONISOLS

The NONISOLS are nonionic surface-active fatty acid esters of higher polyglycols, all substantially 100% active oils or soft waxes, light in color and bland in odor. Free fatty acid content is maintained at less than 3% and ash content less than 0.1%.

	NONISOL 100	NONISOL 110	NONISOL 200	NONISOL 210	NONISOL 300	NONISOL 250
Solidification temp	3°C	6°C	-8°C	-10°C	30°C	32°C
Solubility: water	S	D	D	D	D	S
xylene	S	S	S *	S	S	S
kerosene	I	D	I	S	S*	I

S-soluble

D-dispersible

I-insoluble

***S-soluble above m. pt.**

The NONISOLS all possess comparatively low melting points, high boiling points and low vapor pressure. They are all either soluble or readily dispersible in cold water, sometimes forming viscous, thixotropic mixtures; they are characteristically insoluble in hot water. Solubility in the presence of dissolved electrolyte is good. The NONISOLS are all soluble in polar and semi-polar solvents with the exception of glycerine and the glycols; solubility in aliphatic hydrocarbons varies inversely with water solubility.

Aqueous solutions of the NONISOLS are very slightly acid (pH 5.8-6.7); they are stable in the pH range 3.5-9.5, but will hydrolyze in strong acid or alkali. The NONISOLS have good stability to heating or autoclaving. Being nonionic, they are compatible with either anionic or cationic materials.

As a group, the NONISOLS may be classified as excellent interfacial tension depressants, spreading agents, emulsifiers, lubricants and skin detergents; they are fair surface-tension depressants and penetrants but poor or indifferent foamers. The group includes dispersants, wetting agents, thickeners, solubilizers, rewetting agents. Animal feeding tests indicate the NONISOLS are relatively non-toxic.

Suggested Applications

COSMETICS, PHARMACEUTICALS: ointments, hair dressings, hair conditioners (300); solubilizer for lipstick dyes, essential oils, perfumes, vitamins, sterols, flavors (250); opacifier for cold wave (100); hair shellacs, lotions, protective creams, deodorants, skin detergents, calomine, suppositories (300); polish remover (100,200).

DETERGENTS: waterless cleaners, ink remover (300); solvent emulsions, solvent detergents, dry cleaning detergents, spotting compounds (200,210); clarifying agent for rosin soaps, lime soap dispersant (100) floor oils.

TEXTILES: rewetting agent for sanforizing, wool dyeing, acetate dye dispersant (100); coning oil for nylon and other fibers to prevent graphite penetration (110); lubricants, wool oil additive; starch paste stabilizer and textile softener (300).

METALS: rust preventative oils, emulsion cleaners, solvent cleaners (200, 210); wire drawing, ash free

greases (300); cutting oils (250,210); buffing compounds.

PAPER: rewetting agent and softener for towelling, tissues (100); stabilizer and plasticizer for starch sizing (300).

MISCELLANEOUS: animal feed formulation; insecticide and agricultural sprays (210); plasticizer for cellulose acetate, vinyls, protein, rubber, waxes (100); anti-blocking agent (100); fur and leather treating oils (110,210); defoaming agents (210-300); pigment dispersion (100); wax emulsions (200); flavor solubilizer (250); fuel oil sludge dispersant (200,210); mold lubricant (100); thickening agent (300); emulsion paints (100); inks (100); latex stabilizer (100).

ALRODYNES

Nonionic Emulsifiers for Agricultural Sprays

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Solid. T°	7°C	14°	11°
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The concentrates are stable on storage, mix readily with soft or hard water to produce non-foaming emulsions, quick or slow breaking as desired, compatible with metal salt sprays.



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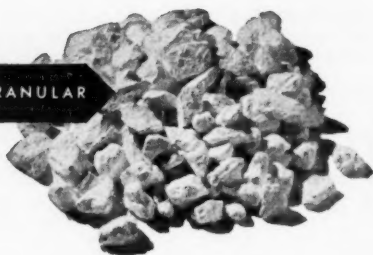
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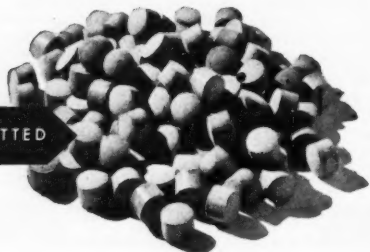


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CHEMICAL SALESMEN: A softer market, a harder job.

Emphasis on Selling

Pressure shifts from purchasing agents to sales managers as most chemicals are readily available, CW nationwide survey reveals.

Principal commodities still very tight in most areas are sulfur, sulfuric acid, chlorine and phthalic anhydride, though increased output will ease these shortages too.

Some blame soft market on slumps in consuming industries, defense stretch-out, changed inventory policies. Others hint at "over-capacity."

Chemical process industries breathed a little easier—at least temporarily—last week when the threatened steel strike was forestalled. It looked as though a pinch in coal-tar chemicals, steel for containers, tankcars and construction—and other less direct effects of a strike—would not develop.

This was especially good news to purchasers of chemicals, who after the hectic post-Korea period of shortages, have been just getting accustomed to being sought after rather than seeking. A CW spot survey of purchasing agents in chemicals-consuming companies, and of chemical manufacturers' sales managers last week reveals that the easing evident in the chemical market in the latter part of last year (CW, Dec. 15, '51) is now practically commoditywide as well as nationwide.

Salesmen admit that they have to beat the bushes to move the quantities of materials their companies are turning out; P.A.'s, while not yet beating salesmen away from their doors, are getting many more calls than they were three months ago.

A Few Holdouts: About the only chemicals still generally tight are sulfur and sulfuric acid, though even here users are optimistic, and some of them are getting enough to keep them relatively happy. Among others that have given buyers gray hair during the past two-year boom, chlorine is easing and so is phthalic anhydride, though the latter is very tight in some areas. What's tight and what're loose vary, of course, from region to region, but even a well-chastened pollster wouldn't hesitate to say that it's pretty much a buyers' market in chemicals.

In the Southwest, for example, carbon bisulfide, chlorine, sulfur and sulfuric are in the very tight category. The West Coast, too could do with more sulfur and sulfuric, rates xylol, latex, cryolite, phthalic just as hard to get, with phthalic possibly the worst of all. In the East, it's phthalic again that is very tight, with chlorine easing somewhat. Companies in the Middle-west say sulfur, sulfuric, superphosphate and methylene chloride are the worst; one firm also complains it can

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MARKETS

no longer get sludge acid since basic producers are regenerating it to ease the shortage.

Not as short, but still posing supply problems to some consumers are zinc dust, ammonia (West Coast); benzene, sodium nitrite, copper chemicals (Southwest); vanillin, ethyl vanillin, naphthalene, phthalic, lithium hydroxide (Chicago vicinity).

Turn About: But look at the chemicals now definitely loose: caustic soda, soda ash, phosphates, muriatic acid, acetone, glycerine, silicate of soda, alcohol, fats and oils, rubber chemicals, styrene, phenol, trisodium phosphate, trisodium pyrophosphate, butyl alcohol, butyl acetate, some insecticides, etc. And containers—including steel drums—are no longer a problem to most users.

On the West Coast, phenol is described as "looser than a goose," styrene "even more so." A Chicago manufacturer, terming the slump "no joke," thinks it will get worse. In the Southwest, a jobber sees price cuts on particular shipments to meet local competition a sign of the toughening battle for sales. In Buffalo, a textile chemicals maker sees at least another six dim months for the textile trade he'd like to be selling.

Finding the Answer: The falling off in consuming industries is one big reason for the swing from tight to easy. Leather as well as textiles has been in the doldrums. And industries having less apparent tie-ins with chemicals have had a depressing influence too; e.g., a slump in the type of glass for TV picture tubes has hit potassium carbonate. The paper and soap industries have been nothing to brag about either, though much slowness can be traced to a change in inventory policy. There is no doubt that management

has put out the word to keep inventories low, and most buying is on a 30-day inventory basis. Some people naturally are holding off waiting for lower prices, and they have been rewarded in some cases.

Other effects are seasonal and/or peculiar to particular areas. Insecticides have been slow, but should pick up about now. Plastics have been leading a mild surge on the West Coast, but it may not last long. In the Southwest, sales to oil well drillers are off mainly because they have not been able to get sufficient steel pipe until recently.

The Government stretch-out program, too, has put a damper on optimistic sales goals many campaigns set for this year. Some blame Government regulations and red tape for their troubles; also say there is no incentive in selling or developing new markets when the profits are drained off in taxes.

In searching for the "why" of today's ample supplies, however, no one has to look far: The huge Government-fostered expansion in chemicals is now really beginning to pour its tons of products on the market. For the program has been geared to a "guns-and-butter" economy, and many sales managers are wondering whether the civilian economy can consume the output without continued demand from the military, are hinting at "over-capacity." Not all are worried though; some say the full impact of the defense effort has yet to be felt, that we'll be glad to have the extra plants then.

Whatever the causes, they know what they have to do: It's hit the road, beat the bushes, make the calls. For selling is the industry's number one job today.

Government Needs

Bid Closing	Invitation No.	Quantity	Item
Business Service Center, Region 2, 250 Hudson St., New York 13, N.Y.			General Services Administration,
Apr. 21	NY-38-36680	14,550 gal	Water emulsion wax
Commanding General, New York Quartermaster Procurement Agency, 111 East 16th St., New York, N.Y.			
Apr. 28	52-1377B	195,084 ea	Tape, adhesive, pressure sensitive, water resistant, type 1, grade B, OD-7
May 2	52-1395B	2,000 btl	Cleaner liquid tracing cloth, 16 fluid oz. btl., spec. O-C-141
		75,000 btl	Cleaner type liquid 3 fluid oz. with dauber, spec. GSA 209E
Purchasing and Contracting Branch, The Engineer Center and Fort Belvoir, Fort Belvoir, Va.			
Apr. 21	S-44-009-52-31B	15,000 lbs	Bromotrifluoromethane
Purchasing Officer, Bureau of Engraving and Printing, 14th & C Streets, S.W., Washington 25, D.C.			
Jun. 19	Schedule 5	85,000 lbs	Dextrin suitable for use in gumming postage stamps, cl. lots
Apr. 25	BEP-238	25,000 lbs	Plate paste drier to be furnished in 600 pound containers
Procurement Division, Supply Service, Veterans Administration, Washington 25, D.C.			
Apr. 21	S-214	10,536 dz	Dentifrice tooth paste white 2 to 2½ oz. net tube

Where you will find THE REAL REVOLUTION

"If we keep in mind the values of opportunity, competition, democracy, productivity, then it is our capitalist society which is the truly revolutionary one—the only society which offers true hope to the masses for release from the long nightmares of tyranny. It is we, not the Marxists with their reactionary ideas of the good dictator, who have the truly constructive, the truly revolutionary ideal."

—from "Capitalism" by David McCord Wright.

If we can only win recognition of this truth, we shall win the struggle of free men against communism. This editorial discusses some of the hurdles that must be cleared.

To win the needed recognition that "our capitalistic society... is the truly revolutionary one," we must keep pounding away both abroad and at home. That is because the communists simultaneously attack us on an international front and try to undermine us from within.

The present drive to rearm ourselves and our allies is crucial to our self-protection on the international front. We must be prepared to meet the armed force of aggressive communism with armed force if we are to secure our physical freedom.

Arms are not enough

But to re-establish parity in arms is only half of the battle. In the last analysis it is not the more important half. To be effective, our arms must be backed by loyalty of men

to our ideals. So, both abroad and at home, we must win men to the faith that we do have "the truly constructive, the truly revolutionary ideal."

On the international front, the effort to win adherence to such faith in our capitalist society meets tough going. That arises from the fact that in some of the countries that are allied with us in the fight against communism, capitalist society has offered to its people no such ideal. In varying degrees "the values of opportunity, competition, democracy, productivity"—those key aspects of American capitalism—are either absent or subordinated in their economic life. Indeed, the *Wall Street Journal* recently remarked that "to the European, capitalism has become synonymous with cartels—and with the disregard cartels foster for the consumer, the worker and the over-all well-being of the nation's economy."

No Simple Solution

Nonetheless, many European labor and governmental leaders sincerely believe that cartels are essential to their economic salvation. They believe that without such restrictions in congested European markets there would be intolerable cut-throat competition and instability of employment. Thus, when we point out that the cartel capitalism so prevalent in Europe lacks the constructive qualities of competitive American capitalism, we may offend European leaders whose wholehearted cooperation we need in the fight against communism.

But, if we soft-pedal that contrast, we sacrifice the opportunity to win understanding and loyalty from millions of Europeans who have had no chance to learn that capitalism can be the constructive and liberalizing force that it is in the United States. Indeed, when many of these millions embrace socialism it is not because they love it. They are rather desperately seeking a tolerable middle course between what they consider the hateful extremes of communism and the undesirable aspects of capitalism as they understand it.

New name not the answer

We know that there is no easy way to handle the problems created by such misunderstanding of American capitalism. Neither do we share the belief that much of the difficulty would be overcome if we were to call American capitalism by some other name. By doing that, the argument runs, we shall relieve it from the unpleasant connotations that are attached to the word capitalism in some other parts of the world. But, after all, if we are to give up all the terms that have come to mean something else in other parts of the world, we must begin by ditching the term "democracy" which, in the official jargon of the Kremlin, seems to mean what we call dictatorship.

In spite of the difficulties, however, we must stick to this job of exporting the truth that our capitalist system does offer opportunity, competition and democracy. We must let the rest of the world see that it means a continuous drive for increased productivity, and the search for profits by increasing sales and consumption, not by trying to sell less for more.

Export alone not enough

The spreading of truth about American capitalism will not be effective if it is merely directed abroad. Unless it is carried on at

home also, it will lack the driving faith that is essential to any convincing export of this type. Nor will export alone come to grips with the communist attack on our country from within—an attack that gets too much help from loyal Americans who short-sightedly repudiate the basic principles of our institutions in their efforts to reform some of their deficiencies. For success both at home and abroad, we must have right here at home a much more militant recognition that it is in fact our capitalist society which offers "the truly constructive, the truly revolutionary ideal."

Here at home, too, this raises difficult complications. Businessmen who are among the leaders and principal practitioners of capitalism, have generally been catalogued as conservatives. Hence, many people must stretch their imaginations a bit to see that businessmen are leaders of a development which has so greatly and so rapidly improved the lot of free men in America that it is truly revolutionary.

These difficulties of definition, however, are relatively superficial aspects of the problem of seeing our capitalist society clearly. The basic facts are that:

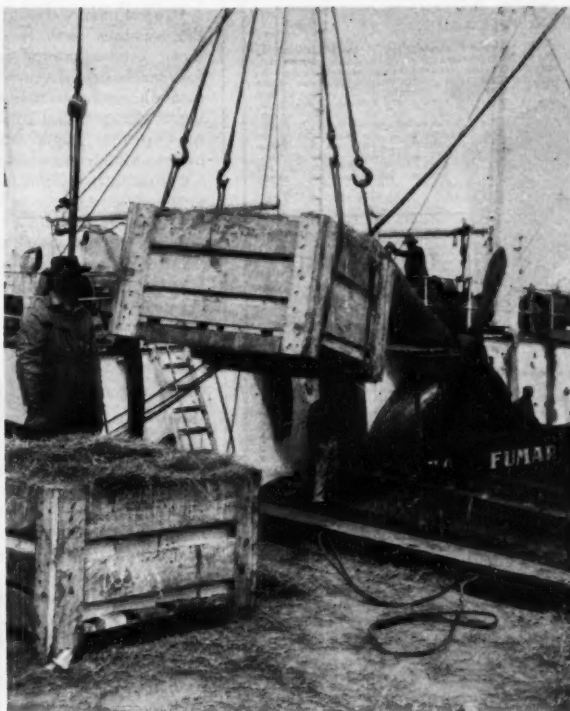
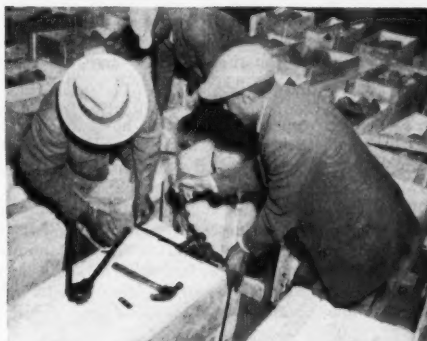
American capitalism is leading free men to an ever higher material standard of living while respecting their spiritual, social and political freedom.

Communism is leading its people back into a life of servile regimentation under dictatorship.

American capitalism advances to high ground never before attained by free men. Communism retreats to ground that men with an appetite for freedom throughout the ages have sought to escape. If we can establish this truth firmly, around the world, we shall no longer need to worry about communism. It will be hopelessly sunk.

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PORT BONUS: Cheaper bulk shipments . . . dockside packed . . . lifted aboard ship for export.

Wharf-Packed, Freight Cut

Growing wharf-packaging service follows promising developments through with one-two punch.

Industry knocks down freight cost by bulk-shipping to Mobile, Ala. for this bulk-to-package-to-ship innovation.

Knock-out punch: Mobile grabs business from other gulf ports in flourishing expansion program.

Mobile is a big port,* and it's conveniently located for all Southeastern shipping. But it has long pined to be bigger, has chafed under Houston, New Orleans and other Gulf port competition. Now it is gunning to become the "New York" of the South, is gearing up to take on the big East and West Coast ports.

In spite of all the competition it must cope with, this week officials of Alabama State Docks were smiling in obvious high humor. Reason: A unique packaging service which the port established a few years ago is beginning

to pay off in substantially increased business.

How it Started: This unusual municipal service first came into being because a manufacturer of fire bricks found that ship operators would no longer accept bulk rail shipments of his products.

The company had long bulk-shipped fire brick to Mobile for export to South America, South Africa, the Far East, and to the closer ports in the West Indies. The firm preferred bulk shipments because of (1) lower freight rates and (2) space saving. But Mobile stevedores and ship operators balked. They said that it took too much extra time to stack the bricks aboard ship and erect barriers to pre-

vent shifting in rough seas. A make-shift arrangement of shipping on skids and paying two-way freight on them proved unsatisfactory.

State Docks General Manager Jerry P. Turner had an idea: He offered to build crates and pack the bricks for a nominal fee. This arrangement has worked out so well that now firebrick manufacturers in several Southern and Midwestern states are using the service. Latest on the list of customers: top-ranking General Refractories.

Tricky Technique: Shipments are booked for a certain vessel. When the cars arrive at the wharf, they are shunted to the pier where the ship is moored. The bricks are unloaded directly from the cars into crates so that unloading and crating is a single operation and no time is lost. It's speedy, too; cars are unloaded, bricks are crated, on the ship in a few hours.

Value Gage: The value of this packaging service to shippers is best illustrated by the fact that a ferrosilicon manufacturer now ships his product in bulk from Rock Island, Wash., clear across the country to Mobile to be boxed and dispatched to Holland.

Significantly, the shipments by-pass

* Mobile is the ninth port in the U. S. on a tonnage basis and fourth largest on the Gulf Coast. It is exceeded on the Gulf in size by Houston, New Orleans and Galveston. New Orleans is its biggest competitor.

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THE CHEMISTRY AND ACTIONS OF INSECTICIDES

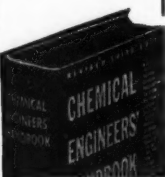
2. Concise reference on insecticides, their chemical and physical properties, and their effects upon insects, plants, and higher animal life, including man. Arranges materials according to their chemical relationships, to enable chemists to understand the basic chemical, physical, and toxicological aspects of insecticides. Two chapters describe the newly important organic insecticide compounds. By H. E. Shepard, Insecticide Div., U.S. Dept. of Agriculture, 504 pp., 22 illus. \$7.00

NONMETALLIC MINERALS

3. Gives accurate descriptions of where non-metallic minerals are found, how they must be treated for commercial acceptance and use, the site and distribution of markets, and price ranges. The book supplies significant facts on alum minerals—aspahals—bitumens—resins—uranium minerals and scores of others. New working tools such as froth flotation of nonmetallic minerals, centrifugal air separations, etc., are also covered. By Raymond B. Ladoo, Consulting Engin., and W. M. Myers, 2nd Ed., 605 pages, 17 illus., \$10.00.

CHEMICAL ENGINEERS' HANDBOOK

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the Pacific Coast ports and other Gulf ports.

Growing Services: Crating glass bottles, another recently developed activity, is also gaining favor. Heretofore bottle manufacturers have had to do it themselves. Now they are finding it cheaper and more satisfactory to ship this fragile merchandise in bulk to Mobile for crating, despite the fact that in many instances, shipment to the closer Atlantic ports would cost less than the long haul to the Gulf.

Sacking bulk coke at shipside is another burgeoning business. Ship operators dislike handling bulk coke because of its light weight (lower paying load) and because as a cargo it tends to shift. To overcome these drawbacks, coke from the interior is now being sacked at Mobile. The big advantage: Although bulk coke is ocean-shipped, there is a minimum load percentage that can be carried; but no such limit exists for the sacked material.

Drumming liquids is the latest—and what may become the biggest—"packaging" operation at State Docks. In doing this, Mobile uses a novel fluid-transfer unit consisting of pumps, hose, etc., mounted on a flat car. It works like this: Tank cars are spotted close to the ship and the mobile drumming unit is brought along side. The

liquid is pumped from the tank car directly into the containers which are then transferred to the ship. This unique phase of the program fills a long existing need of both liquid manufacturers and ship owners.

Bright Future: Already being packaged are edible oils, such as peanut, cottonseed, soy bean, etc., liquid asphalt, pine oil and turpentine.

Too, chemicals manufacturers are now inquiring about this service, appraising its economic possibilities. Reichhold Chemicals at Tuscaloosa and the new Mathieson plant now under construction at McIntosh, close by, are viewed by Docks Manager Turner as prospective customers.

But the Mobile organization, not confining its attention to bulk goods alone, is also moving into machinery export. CHEMICAL WEEK learned that it has already crated and boxed some heavy machinery, but not extensively to date. The organization expects this operation to grow, however, and facilities are being provided to crate such items as agricultural implements, process equipment and tanks.

Several hundred full-time and part-time workers are now engaged in the packaging program, and the number is growing. Hard work behind a clever idea is keeping Mobile up to its competition—and maybe a jump ahead.

Regulation Rampant, Says MCA

Seventeen bills now before the Senate Committee on Interstate and Foreign Commerce would extend present regulation of public carriers by the Interstate Commerce Commission to cover private tank trucks owned by chemical companies. Last week the Manufacturing Chemists Association filed a sharp and vigorous statement in opposition to the entire seventeen.

Said MCA, the Government's regulatory powers have "already reached alarming proportions with a staggering tax load that is threatening our free enterprise system."

Leasing Problem: The MCA singled out in particular bill S-2362 for specially virulent opposition. This measure would limit the right of shippers who own special transportation equipment, such as trucks with aluminum, stainless, nickel or nickel-clad tanks, and trucks with glass, rubber, lead, or other lined tanks, to lease it to others.

Common or contract carriers don't have this special-type equipment; it must be supplied by the shipper. Therefore the shipper-owner often leases this equipment to for-hire carriers on a trip basis. The trucks are leased on a trip basis rather than for a longer time since the lack of volume

of movement via individual carriers doesn't justify term contracts.

Hurting No One: The existing practice, says MCA, is definitely in the interest of both shipper and carrier, is hurting no one, and should not be disturbed. According to the Association, S-2362 imposes "onerous restrictions and unnecessary regulation upon the operation by private carriers of motor vehicles."

Sales Representative: Canada Colors and Chemicals, Ltd. is the new sales rep in Eastern Canada for Ohio-Apex, Nitro, W. Va., a division of Food Machinery and Chemical Corp. Canada Colors will handle all Nitro's plasticizers and chemical products.

Expanding: Philip A. Hunt Co. has opened new sales offices in Philadelphia and Detroit.

3M Office: A new sales office and warehouse has been opened in Boston by Minnesota Mining & Manufacturing Co. The new unit, which will serve the entire New England area, is one in a chain of new facilities being erected in a sales expansion program.

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Autoclaves, stainless steel type 347, 100 gals, jktd & agtd. Chemical & Process Machinery Corp., 146 Grand St., New York 13, N.Y.

Selling Opportunities Offered

Agents and Distributors Wanted

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RW 3926 Chemical Week
330 W. 42 St., New York 36, N. Y.

Sales Representatives wanted for the West Coast Middle West and South Eastern states to sell to wax users waxes now made in U.S. hitherto sold only in Europe. These waxes have been used over a number of years with excellent results and will replace the more expensive vegetable waxes. High commission offered for salesmen with established following amongst manufacturers. Write stating qualifications, territory covered and lines carried. RW-3893, Chemical Week.

Position Wanted

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EXECUTIVE with broad spread of 18 years experience in sales, advertising and publishing. Qualified to direct and coordinate sales activities; plan and execute advertising programs; and build sound public relations. Presently employed at five figure salary . . . but seeking new horizons with a progressive organization. Successful as an administrator and coordinator of creative efforts. Age 41.
PW 3884 Chemical Week, 330 W. 42 St., N.Y. 36.

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Aggressive sales organization in Philadelphia desires another line, preferably in the chemical raw materials field, to handle in this territory. Established over 25 years. Have developed good buyer contact. RA-3930, Chemical Week.

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Calendars, New Rubber Calendars, 6x12", Johnson Joints, 7 1/2 HP motor, Complete. Eagle Industries, 108 Washington St., NYC.

Centrifugal, 36"x40", Bird, Continuous, Consolidated Products, 18 Park Row, N.Y. 38, N.Y.

Centrifugals, Bird Rubber Covered, First Machinery Corp., 157 Hudson St., N.Y. 13, N.Y.

Centrifuges, Sharples Super S/S, First Machinery Corp., 157 Hudson St., N.Y. 13.

Condensers, Coil, St. St., 40 sq. ft. Perry Equip., 1415 N. 6th St., Phila. 22, Pa.

Decanter, Sharples Super-D, s/s type 316, w/10 HP XP Motor. Chemical & Process Machinery Corp., 146 Grand St., New York 13, N.Y.

Disintegrator, Rietz 18 S/S; 30 H.P. First Machinery Corp., 157 Hudson St., N.Y. 13.

Dryer; Double Drum; 28' x 5'. First Machinery Corp., 157 Hudson St., N.Y. 13.

Dryer, Vacuum Shelf, 44"x44" shelves, MD pumps, complete. Eagle Industries, 108 Washington St., NYC.

Dryers, 2 Btkv 32x90 dbie. drum, SS accessories, complete. Eagle Industries, 108 Washington St., NYC.

Dryers, Stainless Drum 5'x10'. First Machinery Corp., 157 Hudson St., N.Y. 13, N.Y.

Filter Alsop, SD-12-NR-30, T316, ST, Perry Equipment Co., 1415 N. 6th St., Phila. 22, Pa.

Filter, Klein stainless steel 100 sq. ft. Chemical & Process Machinery Corp., 146 Grand Street, New York 13, New York.

Filter, Sweetland #12, 36 leaves. Perry Equipment Co., 1415 N. 6th St., Phila. 22, Pa.

Filter Press, 24"x24" aluminum, 24 chambers, Consolidated Prods., 18 Park Row, N. Y. 38.

Filter Press, 30"x30", Iron, Sperry, steam heated, 30 chambers, Consolidated Products, 18 Park Row, N.Y. 38, N.Y., Barclay 7-0600.

Kettle, Reaction, 12 gal. Inconel, Jktd. & Agit. Perry Equip., 1415 N. 6th St., Phila. 22.

Kettles, Dopp C.I. 200 to 650 gal. First Machinery Corp., 157 Hudson St., N.Y. 13.

Mill, Ball Hardinge 4 1/2'x2'. Perry Equipment Co., 1415 N. 6th St., Phila. 22, Pa.

Mill, New Rubber Mills, 6x12, 6x14, 6x16; Johnson Joints, Complete. Eagle Industries, 108 Washington St., NYC.

Mill, Pebble, 32"x36", Porc. lined. Perry Equipment Co., 1415 N. 6th St., Phila. 22, Pa.

Mixer, Lab. BP Vacuum, 7 1/2 gal, jktd. MD. Complete. Eagle Industries, 108 Wash. St., NYC.

Mixer, 110 gal. stainless Patterson Vacuum, Consolidated Prods., 18 Park Row, N.Y. 38.

Mixer, 200 gallon B.P. Jacketed, m.d., Consolidated Products, 18 Park Row, N.Y. 38.

Pebble Mills; 8'x8', Porcelain lined. First Machinery Corp., 157 Hudson St., N.Y. 13, N.Y.

Pulverizer, Raymond High Side 5 roll, Consolidated Products, 18 Park Row, N.Y. 38, N.Y.

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Pumps, Stokes High Vacuum, 212C, Water cooled, 100 CFM, unused, guaranteed, limited quantity, reasonable prices. American Sales Co., 67 E. 8th St., NYC. GR 3-1465.

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Tablet Press, Stokes R, single punch, Consolidated Products, 18 Park Row, N.Y. 38.

Tank, New 20,000 Gal. Cap. 5/16 Steel 6 available. L. M. Stanhope, Rosemont, Pa.

Tank, 5/5, 3,000 gal. for truck. Perry Equipment, 1415 N. 6th St., Phila. 22, Pa.

Tank, 5700 gal., 5/5, Horiz., New. Perry Equip., 1415 N. 6th St., Phila. 22, Pa.

Tanks, SS, from 180-10,000 gal, jktd, storage, agtd. Eagle Industries, 108 Washington St., NYC.

Tanks, 6500 gal. capacity, steel storage, recovered from dismantled tank cars, coiled & non-coiled. Marshall Railway Equipment Corp., 50 Church St., N.Y. 7, N.Y.

Vacuum Reactors, 2500 gallon steel agitated closed, Chemical & Process Machinery Corp., 146 Grand St., New York 13, N.Y.

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BOOKLETS

Chemicals

Alkyd Molding Compound

Brochure containing information on the physical properties and compression and transfer molding characteristics of "Plaskon 440," a glass-fiber reinforced alkyd molding compound. An additional data sheet outlines the properties of "Plaskon 442," an alkyd molding compound whose form and molding properties are the same as those of 440, but whose properties when molded present notable variations. Libbey-Owens-Ford Glass Co., Plaskon Div., Toledo, Ohio.

Methyleyclohexyl Stearate

Technical service report outlining the properties and uses of methyleyclohexyl stearate, which is utilized in the plastics industries as a plasticizer and mold lubricant for phenol-formaldehyde and shellac molding compounds; in the rubber industry, the compound has served for plasticizing chlorinated rubber and for swelling both crude and vulcanized rubber. Witco Chemical Co., 295 Madison Ave., New York, N.Y.

Butyl "Carbitol"

Technical data sheet covering physical and chemical properties, shipping data, and applications of butyl "Carbitol" (diethylene glycol monobutyl ether)—used for formulating nitrocellulose lacquers

and synthetic coatings, and for printing and stamp pad inks. It also finds application as a solvent for many substances. Union Carbide and Carbon Corp., 30 East 42nd St., New York, N.Y.

Fine Chemicals

4-p. folder giving price and general information on the firm's products, listed here as Davidson reagents, Karl Fischer reagents, fine organic chemicals, and special laboratory apparatus. Jasonols Chemical Corp., 1085-87 Myrtle Ave., Brooklyn, N.Y.

Equipment

Process Pumps

8-p. bulletin outlining characteristics, specifications, design and construction features, and uses of chemical process pumps, for the pumping of process liquids in moderate capacities against low, medium and high heads. Food Machinery & Chemical Corp., Peerless Pump Div., Indianapolis, Ind.

Centralized Lubrication

8-p. bulletin discussing centralized systems for lubricating industrial machines of all types; explains and illustrates how firm handles lubrication problems for rocker arm straightener, automatic shears, punch press builder, and deep frame jaw crusher. The Farval Corp., 3293 East 80th St., Cleveland, Ohio.

Electrolytic Motor-Generators

14-p. bulletin reviewing the firm's line of low-voltage, direct current, motor-generators for electrolytic processes, presents a brief history of the development of electrolytic motor-generators plus a discussion of several electroplating fundamentals. The Electric Products Co., 1725 Clarkstone Rd., Cleveland.

Radiation Instruments

8-p. illustrated bulletin giving information on the main features, specifications, and uses of ten nuclear radiation detectors, among which are the radiation monitor, scintillation counter, portable radiation probe, thermocouple vacuum gage and others. General Electric Co., Schenectady, N.Y.

Carton Designs

28-p. "Style Guide" contains construction designs for folding cartons which are used in packaging as well as information on the use of machine-filled and machine-formed cartons. Robert Gair Co., Inc., 155 East 44th St., New York, N.Y.

Plastic Pipe Fittings

14-p. booklet entitled, "Fittings for Pipe Extruded of Tenite," discussing the fabrication of various fittings from extruded pipe lengths and the methods of installing these joints in pipe lines. Detailed diagrams supplement the text throughout. Tennessee Eastman Co., Kingsport, Tenn.

CHEMICAL WEEK • ADVERTISER'S INDEX • APRIL 19, 1952

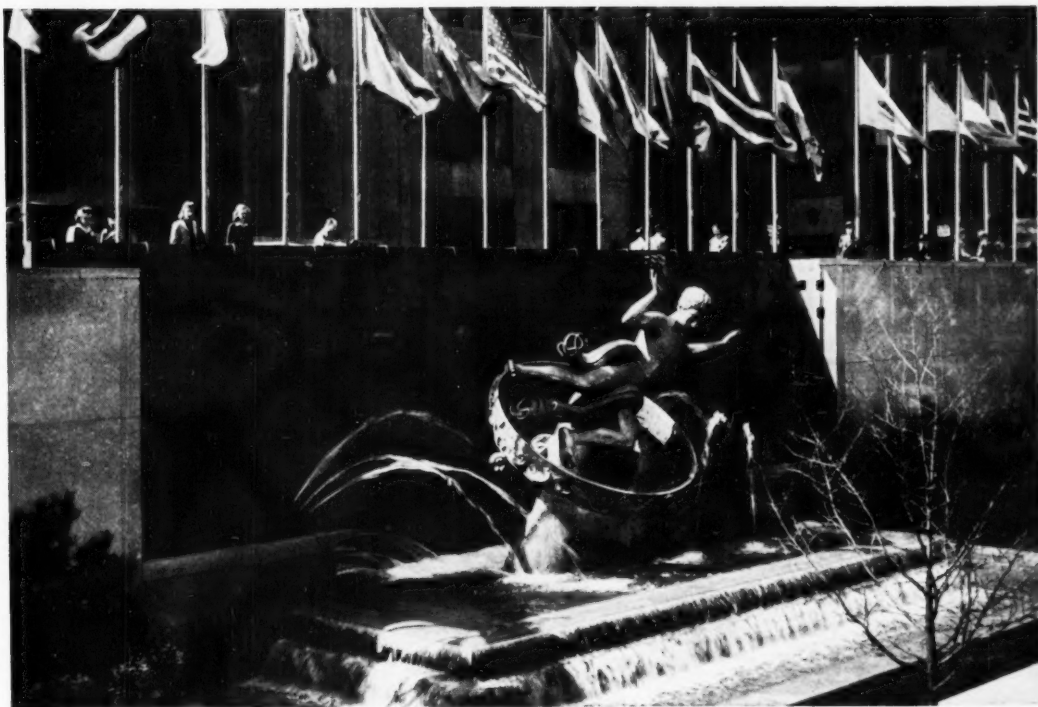
ADAMS CO., INC., R. P.	T54
Agency—Melvin F. Hall Advertising Agency, Inc.	
AIR PRODUCTS, INC.	5
Agency—Thoma & Gill	
ALROSE CHEMICAL CO.	59
Agency—George T. Metcalf Co.	
AMERICAN CYANAMID CO.	25
Agency—Hazard Advertising Co.	
ANTARA PRODUCTS DIVISION, GENERAL DYEYSTUFF CORP.	3rd Cover
Agency—J. Hayden Twiss Advertising	
ARCHER, DANIELS, MIDLAND CO.	50
Agency—The Bayless-Kerr Co.	
AUTOMATIC SPRINKLER CORP., OF AMERICA	43
Agency—G. M. Basford Co.	
BAKER CASTOR OIL CO., THE	41
Agency—Samuel Croot Co., Inc.	
BALTIMORE & OHIO RAILROAD	33
Agency—The Richard A. Foley Advertising Agency, Inc.	
BERKSHIRE CHEMICALS, INC.	30
Agency—J. Hayden Twiss Advertising	
CARBIDE & CARBON CHEMICALS CO., A DIVISION OF UNION CARBIDE & CARBON CORP.	37
Agency—J. M. Mathes, Inc.	
CELANESE CORP., OF AMERICA	22
Agency—Ellington & Co., Inc.	
CHURCH & DWIGHT CO., INC.	B49
Agency—J. Walter Thompson Co.	
COLEMAN INSTRUMENTS, INC.	28
Agency—Jack Hollander	
COMMERCIAL PETROLEUM & TRANSPORT CO.	T24
Agency—Langhlin-Wilson-Baxter & Persons Advertising	
COMMERCIAL SOLVENTS CORP.	18
Agency—Fuller, Smith & Ross, Inc.	
COOK ASSOCIATES, INC., W. MILLER	B20
Agency—Irving L. Brown Adv.	
CROSBY CHEMICALS CO., INC.	62
DODGE & OLCOTT, INC.	38
Agency—Peck Advertising Agency	
DOW CHEMICAL CO.	2-3
Agency—McManus, John & Adams, Inc.	
DOW CORNING CO.	45
Agency—Don Wagnitz Advertising	
EMERY INDUSTRIES, INC.	48
Agency—Ruthrauff & Ryan Inc.	
ERIEZ MFG. CO.	11
Agency—John Mather Lupton Co. Inc.	
FAIRBANKS, MORSE & CO.	21
Agency—The Buchen Co.	

FOOTE MINERAL CO.	51
Agency—Rennet Advertisers	
GROSS & CO., A.	53
Agency—J. Hayden Twiss Advertising	
HARSHAW CHEMICAL CO., THE	60
HERCULES POWDER CO.	12
Agency—Fuller & Smith & Ross Inc.	
HEYDEN CHEMICAL CORP.	Back over
Agency—Sommers-Davis, Inc.	
INLAND STEEL CO.	47
Agency—Weiss & Geller, Inc.	
INTERNATIONAL BUSINESS MACHINES	55
Agency—Cull & Proshrey Inc.	
INTERNATIONAL MINERALS & CHEMICAL CORP.	26
Agency—C. Franklin Brown Inc.	
KENNEDY CAR LINER & BAG CO., INC.	46
Agency—Grubb & Peterson, Adv.	
KESSLER CHEMICAL CO., INC.	B54
Agency—Sommers-Davis, Inc.	
KNIGHT, MAURICE A.	4
LITHIUM CORP. OF AMERICA, INC.	T20
Agency—F. H. Faber Advertising	
MAAS CHEMICAL CO.	56
Agency—Heintz & Co., Inc.	
MCGRATH-HILL BOOK CO.	66
MCKESSON & ROBBINS, INC.	B24
Agency—Bisheene Advertising Co.	
MENTE & CO., INC.	36
METALLOY CORP.	T20
Agency—F. H. Faber Advertising	
MICHIGAN CHEMICAL CORP.	40
Agency—Wesley Aves & Associates	
MILLER, RAY	T61
Agency—William N. Scherer	
MUTUAL CHEMICAL CO., OF AMERICA	8
Agency—J. Hayden Twiss Advertising	
NAUGATUCK CHEMICAL DIVISION U. S. RUBBER CO.	17
Agency—Fletcher D. Richards, Inc.	
PFIZER & CO., INC. CHAS.	42
Agency—MacManus, John & Adams, Inc.	
RHEEM MFG. CO.	17
Agency—Campbell-Ewald Co.	
RICHES-NELSON, INC.	T49
Agency—Givaudan Advertising, Inc.	
SHARPLESS CHEMICALS, INC.	29
Agency—Sommers-Davis, Inc.	
SHELL CHEMICAL CORP.	2nd Cover
Agency—J. Walter Thompson Co.	
SPIERRY & CO.	1
Agency—Simmonds & Simmonds, Inc.	
TENNESSEE CORP.	23
Agency—Crawford & Porter, Inc.	

TENNESSEE PRODUCTS & CHEMICAL CORP.	31
Agency—The Griswold-Ehlerman Co.	
TITLESTAD CORP., NICOLAY	6
Agency—Richard LaFond Advertising, Inc.	
TOLEDO SCALE CO.	32
Agency—Hesson-Reichert, Inc.	
ULTRA CHEMICAL WORKS, INC.	34
Agency—S. R. Leon Co., Inc.	
UNION CARBIDE & CARBON CORP., CARBIDE & CARBON CHEMICALS COMPANY	37
Agency—J. M. Mathes, Inc.	
U. S. STEEL CO.	44
Agency—Batten, Barton, Durstine & Osborn, Inc.	
VIRGINIA CAROLINA CHEMICAL CORP.	52
Agency—Albert, Sidney, Noble Advertising	
VULCAN COPPER & SUPPLY CO.	7
Agency—L. F. McCarthy & Co.	
WILLIAMS & COMPANY, INC., C. K.	27
Agency—Emery Advertising Corp.	

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Statue of Prometheus, Rockefeller Plaza, New York. Photo by Gelluway.

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